IPP

VOLUME IV

FINAL

ENVIRONMENTAL STATEMENT
INTERMOUNTAIN POWER PROJECT
US Department of the Interior
Bureau of Land Management

THIS VOLUME IV FINAL ES
IS TO BE USED IN CONJUNCTION
WITH VOLUMES I, II, AND III OF
THE DRAFT ENVIRONMENTAL STATEMENT

INTERMOUNTAIN POWER PROJECT

ENVIRONMENTAL STATEMENT

FINAL

VOLUME IV

Prepared by:
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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SUMMARY

( ) Draft (X) Final Environment Statement

Department of the Interior
Bureau of Land Management
Utah State Office

1. TYPE OF ACTION (X) Administrative ( ) Legislative.

2. BRIEF DESCRIPTION OF ACTION

The Intermountain Power Project is proposed by a group of Utah, California, Nevada, and Wyoming municipalities, rural electric cooperative, and a privately-owned company. The applicant has proposed construction and operation of a 3,000-megawatt coal-fired generating station at the Salt Wash site, Wayne County, Utah and has agreed to the possibility of an alternative site, near Lynndyl in Millard County, Utah. Both sites are analyzed in comparable detail.

Two 500-kilovolt d.c. transmission lines are proposed to deliver power to a converter station at Victorville, California. Power would then be distributed over existing systems to the cities of Anaheim, Burbank, Glendale, Los Angeles, Pasadena, and Riverside. One 230-kilovolt a.c. transmission line is proposed to deliver power to the Ely, Nevada area and a 230-kilovolt transmission line is proposed to provide power to the Oixie-Escalante area in Utah. In addition, two 345-kilovolt lines are proposed to be inter-connected with existing systems in Utah for delivery to members of the Intermountain Consumer Power Association and the Utah Power and Light Company.

About 8 million tons of coal would be acquired annually from the Wasatch Plateau-Book Cliffs coal fields of Central Utah to be consumed at the power plant. Approximately 50,000 acre-feet of water would be consumed annually.

3. SUMMARY OF ENVIRONMENTAL IMPACTS AND AOVERSE ENVIRONMENTAL EFFECTS

The generating station and support facilities, including power transmission systems, would occupy 2,650 to 5,650 acres of land and would disturb 8,300 to 12,000 acres during construction phases.

Applications for rights-of-way on public lands include 39,500 acres for the Salt Wash proposal, and 25,600 acres for the Lynndyl alternative. Ownership of an additional 4,640 acres of public land for the power plant site would be transfered to the project.

Air quality studies predicted that ground level concentrations of sulfur-dioxide and particulates at the Salt Wash site would exceed the Class I air quality standards identified in the Prevention of Significant Oeterioration Regulations. This violation of standards would occur within Capitol Reef National Park. Similar air quality studies at the Lynndyl alternative site indicated that neither State or Federal air quality standards would be exceeded.

The use of 30,000 acre-feet of water from Fremont River for the Salt Wash Site would decrease the river's downstream flow by about 57 percent and would increase the salinity of the Colorado River at Lees Ferry an estimated 0.6 milligrams per liter. The conversion of water from agricultural use to consumptive use at the Lynndyl alternative site could require the retirement of 7,200 to 7,800 acres of irrigated farmland. The Lynndyl alternative site would cause a 9-percent reduction of water flowing to areas surrounding the Delta, Utah area which could affect wildlife habitat. Even with present salvage techniques, some scientific and educational archaeological information could inadvertently be lost.

Conflicts among specific features of IPP's project proposals and the existing land use plans of Forest Service and Bureau of Land Management would require consideration.

The project, during construction phases, would create direct employment for 3,200 to 3,600 persons. During operational periods, about 660 persons would be employed by IPP.

The increases in population, housing, and economic activity in the impact areas, whether it be in Wayne or Millard and Juab counties, would create socioeconomic impacts. Present local governmental operations, procedures and community infrastructures would be placed under stress, especially during the peak of IPP construction.

4. ALTERNATIVES CONSIOERED

Alternatives considered included power plant sites in Emery, Grand, Wayne, and Millard counties, Utah; transmission line routes and design; water sources; alternative coal handling facilities; coal transportation; generating station design; alternative methods of land transfer for the plant site; purchase of other power; conservation of electrical energy; and no action.

5. COMMENTS WILL BE REQUESTED FROM THE FOLLOWING:

Attached is a list of Federal, State, and non-government agencies and organizations with jurisdiction and expertise which will receive copies of the final statement.

6. DATE STATEMENT MADE AVAILABLE TO THE ENVIRONMENTAL PROTECTION AGENCY ANO THE PUBLIC:
DES: July 10, 1979
FES:

ATTACHMENT

FEDERAL AGENCIES

*Advisory Council on Historic Preservation
Department of Agriculture
*Forest Service
*Soil Conservation Service
Department of Commerce
National Oceanic and Atmospheric Administration
Department of Defense
Department of Energy
Bonneville Power Administration
Office of Energy Research
Office of Environment
*Federal Energy Regulatory Commission
*Western Area Power Administration
Department of Health, Education and Welfare
Department of Housing and Urban Development
Department of the Interior
Bureau of Indian Affairs
*Bureau of Mines
*Bureau of Reclamation
*Fish and Wildlife Service
*Geological Survey
*Heritage Conservation and Recreation Service
*National Park Service
Office of Surface Mining
*Regional Solicitor
Department of Labor
Mine Health and Safety Administration
Occupational Safety and Health Administration
Department of Transportation
*Federal Aviation Administration
*Federal Highway Administration
*Environmental Protection Agency
Interstate Commerce Commission

STATE AGENCIES AND ENTITIES

State of Utah
*Governor's Office
*Division of State Lands/Forestry and Fire Control
*Utah State Agencies Clearing House (A-95)
State of Utah Legislators
Utah Bureau of Environmental Health
Utah Department of Highways
State of Arizona
Governor's Office
*Governor's Clearing House
*Arizona Game and Fish
*Arizona Office of Economic Planning and Development

State of Nevada
Governor's Office
*Governor's Clearing House
State of California
*Governor's Clearing House
*California Energy Commission
*California Air Resources Board

LOCAL AGENCIES

County Commissioners:
Carbon, Castle Dale, Emery, Garfield, Iron, Juab, *Millard, Piute, Sanpete, Sevier, Utah, *Wayne (Utah); Lincoln, White Pine, Clark (Nevada); Mojave (Arizona); San Bernardino (California).
Five-County Association of Governments (Utah)
*Six-County Commissioners Organization (Utah)
Southeastern Utah Association of Governments
*Loa City Council
*District 4 Law Enforcement Council
*Six County Economic Development District

NONGOVERNMENTAL ORGANIZATIONS

Archaeological Society of Utah
*California Association of 4WD Clubs
Canyon Country Coalition
Chamber of Commerce (Carbon County)
Chamber of Commerce (Salt Lake Area)
Common Cause
Conservancy Resource Center
Council of Utah Resources
Defenders of the Outdoor Heritage
Defenders of Wildlife
Desert Protective Council
Enchanted Wilderness Association
Environmental Awareness
Environmental Defense Fund, Rocky Mountain/Great Plains
Escalante Wilderness Committee
*Friends of the Earth
Good Earth
Institute of Ecology
Izaak Walton League - Utah Division
ISSUE
League of Women Voters
Mearns Wildlife Society
Mineralogical Society of Utah
National Parks and Recreation Association
Natural Resources Defense Council Inc.
National Wildlife Federation
Nature Conservancy
Pro-Utah, Inc.
Rocky Mountain Center on Environment

Rocky Mountain Federation of Mineralogical Societies
Rocky Mountain Sportsmen Association
Save Our Canyons Committee
*Sevier River Commission
*Sierra Club
Society of Conservation of Bighorn Sheep
Utah Audubon Society
Utah Cattlemen's Association
Utah CLEAR
Utah Environment Center
Utah Farm Bureau
Utah Lung Association
Utah Mining Association
Utah Nature Study Society
Utah Sportsmen Association
Utah Water Users Association
Utah Wildlife and Outdoor Recreation Federation
Utah Wool Growers Association
Wasatch Mountain Club
Wayne County Farm Bureau
Western Rockhound Association
*Wildlife Society--Utah Chapter
The Wilderness Society
Women's Conservation Council of Utah

CONGRESSIONAL

Utah Delegation
California Delegation

PRIVATE COMPANIES AND UNIVERSITIES

Irrigation Companies (Millard County, Utah)
*Proponents of the Intermountain Power Project
Coal companies in the Carbon County-Emery County area.
Brigham Young University
University of Utah
College of Eastern Utah
Southern Utah State College
Dixie College
University of Nevada, Las Vegas
*Nevada Power Company, Las Vegas
*Wayne County Water Conservancy District
*Garkane Power Association
*Central Utah Water Company
*Ute Energy Company

*About 800 draft environmental statements were mailed to Federal, State, and local government agencies as well as to private individuals. An asterisk indicates a response.

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CONSULTATION AND COORDINATION

INTRODUCTION

The Intermountain Power Project Draft Environmental Statement (DES) was released for public review on July 10, 1979. A Federal Register notice was published soliciting comments for a 60-day period, which ended September 10, 1979.

About 800 copies of the DES were mailed to Federal, State, and local government agencies, private groups, organization, and individuals for comment. Additionally, public hearings were held in Loa, Delta, and Salt Lake City, Utah; Las Vegas, Nevada; Victorville and Los Angeles, California during August, 1979.

The testimony transcripts from the public hearings and comments received in letters during the public review period identified part of the DES that needed correction, clarification, or expansion. Most information in the draft is still accurate and complete, and a complete reprinting of the draft statement is not warranted. The Final Intermountain Power Project Environmental Statement includes new information, corrections, and responses to specific comments. The final environmental statement must, therefore, be used in conjunction with the DES for a complete display of information and analysis.

The Final Environmental Statement (FES) is an expansion of Chapter 9 of the DES. This single volume contains four major sections: (1) A summary of unavoidable adverse impacts which provides a comparison between the proposed Salt Wash power generating station with support facilities and the alternative Lynndyl site; (2) Public comments and responses (including testimony from hearings and letters) which address the adequacy of the statement or provide new information; (3) Data and analysis which provide additional information; (4) The Addendum which provides changes made to maps, charts, profiles, and text.

SECTION 1--CHAPTER 9

SUMMARY OF UNAVOIDABLE ADVERSE IMPACTS

Air Quality

The discharge of pollutants into the atmosphere would be an unavoidable impact. IPP's emissions would be: 1) SO_2 - 44.2 tons per day, 2) Particulates - 5.6 tons per day, and 3) NO_2 - 251.4 tons per day,

All emission standards would be met, and all air quality standards, with the exception of the Prevention of Significant Deterioration (PSD) increments, would be met. The Class II annual and 24-hour SO_2 PSD increments, surrounding the primary plant site would be exceeded. The Class I SO_2 PSD increments would be exceeded in Capitol Reef National Park and Canyonlands National Park (in Utah). Short-term (3-hour and 24-hour) Class I Standards in Capitol Reef National Park would be exceeded 34 days each year, above the 5 percent variance permitted by the Clean Air Act Amendments of 1977. Calculations show that:

1. Within Capitol Reef National Park itself, the visual range would be reduced from 87 miles to between 80 and 84 miles for 7 to 11 days each year. For the remainder of the year, the reduction in visibility would be less than 3 miles out of 87 miles.

2. The visual range of an observer standing in Capitol Reef National Park and looking eastwardly toward the IPP plant would be reduced from 87 miles to between 75 and 83 miles for about 6 months of the year, depending upon observer location relative to the plume.

3. The current visual range in and near the park, based on data gather in 1975 through 1976, is approximately 40 miles or less for about 20 percent of the time (due mostly to blowing dust). Under these conditions, power plant emissions could further reduce the visibility to between 34 and 39, miles both within the park boundaries and for an observer standing in the park looking toward an object outside the park boundaries.

As a result of NO_2 emissions, a discoloration of the atmosphere could be expected.

It is the present policy of the National Park Service to protect the scenic values of their Class I areas from any visual impairment at human levels of perception (memo from Director, NPS, to Mr. David Hawkins, EPA, April 5, 1978).

Air Quality

The discharge of pollutants into the atmosphere would be an unavoidable impact. IPP's emissions would be:

1. SO_2 - 55.6 tons per day,
2. Particulates - 7.1 tons per day, and
3. NO_2 - 251.4 tons per day.

All emission standards would be met, as would all State and Federal air quality standards. No significant visibility reductions are calculated to occur at any existing or potential Class I region as a result of emissions from the IPP power plant at the Lynndyl site. However, depending upon meteorological conditions and plume observer position, a discoloration of the atmosphere could be expected in the Sevier Desert due to the IPP plume.

Topography and Paleontology

Topography on 200 acres would be altered by removal of 7.6 million cubic yards of borrow materials.

The Morrison Formation, in which most North American dinosaurs have been found, would be adversely affected by increased recreational use and rock-hounding in the region. The power transmission systems would cross 41 miles of geologic formations with potential for high paleontological significance. An unquantifiable loss of scientific-educational information would result.

Soils

Increased off-road vehicle (ORV) travel in the regional setting would disturb vegetation on high wind erosion hazard soils northeast of Hanksville. Construction activities would cause localized erosion on approximately 5,710 acres within the project area. Approximately 500 miles of moderate to high wind erosion hazard soils would be crossed by the power transmission systems. Increased erosion would be localized on the disturbed areas and no impacts on other resources are expected. Severe erosion and slumping could occur along 4 miles of power transmission system in the Fishlake National Forest in Utah.

Water Resources

Approximately 2 percent (30,000 acre-feet) of Utah's share of Colorado River water would be committed to IPP. Withdrawal of the water from the Fremont River would increase the salinity of the Colorado River at Lee's Ferry by, at most, 0.6 milligrams per liter. This would be an increase of less than 1/10 of 1 percent. From November through March, the Fremont River's flow would be zero below the diversion dam, and 80 percent of the Dirty Devil River's flow would also be eliminated. The natural flow of one spring and three seeps are predicted to stop their flows. However, 24 springs and seeps are in the area of potential impact. The quality of the ground water in the Navajo Sandstone aquifer would decrease with pumping by IPP.

Topography, and Paleontology

Topography on 200 acres would be altered by the removal of 1.2 million cubic yards of borrow materials. Paleozoic (600-225 million year-old) formations containing trilobites and other invertebrate fossils would be adversely affected by the increased population recreating within the region. The power transmission systems would cross 23 miles of geologic formations having potential for high paleontological significance. An unquantifiable amount of scientific and educational information could be lost.

Soils

An increase in off-road vehicle (ORV) travel would disturb vegetation on soils having a high potential for wind erosion.

Construction activities in the primary project area would disturb 2,600 acres of soils.

Erosion along power transmission systems would increase as vegetation that serves to stabilize soils would be removed or crushed by construction equipment. The potential for increased erosion would be greatest on 400 miles of high erosion hazard soils that would be affected by the transmssion line systems.

Erosion would be localized on the disturbed areas, and no impacts on other resources would be expected.

Water Resources

Loss of seepage from the Central Utah Canal could result in the loss of discharge of 650 acre-feet per year at Clear Lake Springs, 1,700 acre-feet at seeps west of Greenwood, and 750 acre-feet at Mud Lake Springs. This would represent a 4 percent reduction of flow at Clear Lake Springs and an unknown reduction at the remaining springs and seeps. Seepage in the Delta-Melville-Abraham-Deseret (DMAD) service area, conveyed to the extensive open drain system and then to the surrounding wetlands and playas, would be approximately 2,100 acre-feet per year, a 9 percent decrease from present levels.

Assuming increased pumping of the eight DMAD wells, 13,900 acre-feet each year above present average levels of 14,200, there would be a slight acceleration of the present trend of declining water quality. Under IPP project conditions, water of 1,000 parts per million dissolved solids may reach the Delta area in 90 to 140 years.

Pumping a maximum of 5,500 acre-feet of water per year in the project area would create a new cone of depression in the immediate vicinity of the wells and may alter ground water hydraulic gradients, which would cause a slight shift in ground water movement.

Vegetation

Approximately 11,890 acres of vegetation ranging from alpine forest to hot desert and Joshua tree forest would be disturbed. The majority of the disturbance would be in the cold desert type. About 5,650 acres of those disturbed would remain occupied by project components. Up to 240 acres of riparian vegetation could be adversely altered due to diversion of water from the Fremont River and stopping of natural flow at springs and seeps.

Even with Federally required measures, individual plants of threatened or endangered species could be inadvertently destroyed. It is not likely that the continued existence of any candidate, proposed, or officially listed threatened or endangered plant species would be jeopardized by the construction and operation of IPP at the Salt Wash Site.

Vegetation

Vegetation on 8,320 surface acres would be temporarily disturbed during construction, and 2,650 acres would be occupied for the life of the project. Wetland vegetation would be influenced by an estimated 9 percent reduction in surface water, abandonment of Fool Creek Reservoirs and of about 50 miles of the Central Utah Canal.

Even with Federally required measures, it is possible that some individual threatened or endangered plants could be inadvertently destroyed. It is not likely that the continued existence of any candidate proposed or officially listed species would be jeopardized.

Animal Life

Overall, the project would disturb about 11,890 acres of wildlife habitat of which 5,650 acres would remain occupied at least during the life of the project. This would affect only a minute portion of the total habitat and populations in the affected areas.

The additional people that the proposed project would bring to Wayne County, Utah would increase the hunting pressure on and poaching and harassment of the region's game and non-game species including the endangered Utah prairie dog, bald eagle, peregrine falcon, and black-footed ferret, and could reduce animal life populations. The presence of 60 miles of new permanent access roads would further intensify this pressure. The degree of decline cannot be accurately predicted. Incidental losses are not expected to adversely modify the critical habitat of threatened or endangered species. The impact on the populations of prairie dogs and eagles would not be severe enough to jeopardize their continued existence. However, only five active peregrine eyries are known to exist in Utah, thus unnecessary loss of even one peregrine could constitute jeopardy to the Utah population (John Gill, FWS).

Up to 240 acres of riparian habitat important to deer, quail, ring-neck pheasant and non-game animals would be adversely altered by surface water diversion and ground water pumping. Up to 434 acres of agricultural land important to ring neck pheasant could be occupied by residential developments. Twenty-five pheasants and their annual production could be lost. This is 100 percent of the population in the affected area. Ground water pumping could stop natural flow from seeps and springs originating from Navajo Sandstone between Waterpocket Fold and Henry Mountains. Between 25,000 and 147,200 acres of wildlife habitat in a desert region could be affected by loss of these water sources.

Transmission system towers along 47 miles in sage grouse concentration areas would provide perches for raptors and make the sage grouse more susceptible to predation. The magnitude of losses cannot be accurately assessed.

An additional 31,000 game fish per year would be needed within the region to supply the equivalent of the 1973 quality of fishing to the IPP-related population. The Utah Division of Wildlife Resource fish hatcheries are presently operating at their capacity of 11 to 12 million trout per year. There would be greater pressure put on UDWR to plant more fish to meet increased demand. In addition, the average age and size of fish in the waters of the region would decline.

Some incidental losses of the endangered Colorado squawfish and humpback chub, the proposed endangered bonytail chub, and the proposed threatened humpback sucker in the Green River could occur as a result of increased fishing pressure. These incidental losses would not jeopardize the continued existence of these species or adversely modify their critical habitat.

Animal Life

Overall, the project would disturb about 8,320 acres of wildlife habitat, of which 2,650 acres would remain occupied at least for the life of the project. This would affect only a minute portion of the total habitat and populations in the affected areas.

The additional people that the project would bring to central Utah would increase the hunting pressure on and poaching and harassment of the region's game and non-game species, including the endangered peregrine falcon and bald eagle, and could reduce animal life populations. This situation would be intensified by increased travel encouraged by approximately 47 miles of new permanent access roads. The degree of decline cannot be accurately predicted.

Incidental losses are not expected to adversely modify the critical habitat of threatened or endangered species. The impact on the population of eagles would not be severe enough to jeopardize their continued existence. However, only five active peregrine eyries are known to exist in Utah, thus unnecessary loss of even one peregrine could constitute jeopardy to the Utah population (John Gill, FWS).

A 9 percent reduction in waterflows to bottomlands in Millard County would reduce the numbers of resident waterfowl and other marsh-associated birds. Migratory waterfowl would also be affected. Abandonment of the Fool Creek Reservoirs would displace in excess of 2,000 migrant waterfowl and an unknown number of resident waterfowl and marsh-associated birds.

Retirement of 7,250 to 7,760 acres of irrigated farmland in eastern Millard County could reduce food and cover for ring-neck pheasant. However, the opposite could be true depending on private management. Approximately 1,300 breeding males, 5,200 breeding females, and their annual production of 24,200 young pheasants could be lost if abandoned farmlands were fully grazed by domestic livestock or if vegetative cover was removed by other means. This would represent a loss of approximately 8 percent of the pheasants in Millard County.

Transmission system towers along 20 miles of sage grouse concentration areas would provide perches for raptors and make sage grouse more susceptible to predation. The magnitude of losses cannot be accurately assessed. If construction is done during the raptor nesting season, nest abandonment and a decrease in raptor production would likely result.

An additional 22,000 game fish per year would be needed within the region to supply the equivalent of the 1973 quality of fishing to the IPP-related population. The Utah Division of Wildlife Resource fish hatcheries are presently operating at their capacity of 11 to 12 million fish per year. There would be greater pressure on UDWR to plant more fish to meet increased demand. In addition, the average age and size of fish in these waters would decrease through increased harvest.

Cultural Resources

Vandalism to the cultural values known to exist in the regional setting would result from the increased numbers of people associated with the proposed project. Several hundred known archaeological sites have been recorded in the area, of which 45 are eligible for inclusion in the National Register of Historic Places. The amount and significance of loss cannot be accurately predicted.

Inadvertent damage could also occur to subsurface values not initially discovered through field inventories; 479 known sites (of which 88 appear to meet National Register eligibility criteria) could be affected within the primary project area and along the proposed transmission system routes.

Wherever possible and feasible, cultural resources would be avoided by construction and related activities. If this is not possible, the BLM would consult with the appropriate State Historic Preservation Officer to determine the most satisfactory means of mitigating damage. Even with present salvage techniques, some scientific and educational information could be lost.

Cultural Resources

Vandalism to the cultural values known to exist in the regional setting would result from the increased numbers of people associated with the project. Several hundred sites have been recorded in this area, of which 24 are listed in the National Register of Historic Places. Inadvertent damage could occur to surface and subsurface values not initially discovered through field inventories; 274 known sites (of which 82 appear to meet National Register eligibility criteria) could be affected within the primary project area and along the transmission system routes.

Three segments of the preferred transmission line system would be visible from the following historic sites currently (April 1979) listed on the National Register of Historic Places:

Old Irontown, Iron County, Utah;
Mountain Meadows Historic Site, Washington County, Utah;
Bristol Wells Town Site, Lincoln County, Nevada.

The introduction of visual elements out of character with these sites would detract from their historic setting.

Wherever possible and feasible, cultural resources would be avoided by construction and related activities. If this is not possible, the BLM would consult with the appropriate State Historic Preservation Officer to determine the most satisfactory means of mitigating damage. Even with present salvage techniques, some scientific and educational information could be lost.

Recreation and Aesthetics

Outdoor recreational use would increase within the region. Additional recreational pressures would occur at developed sites presently being used at greater than 20 percent of their design capacity, increasing use to 40 percent or more at many of the sites, which would result in overcrowding and deterioration of the environment and facilities. Overcrowding and deterioration would be intensified at sites presently being used at greater than 40 percent capacity.

The appeal of recreation attraction areas within the regional setting would be reduced for some visitors. The increase in permanent population would result in increased ORV, hunting, and other dispersed activity. Competition for available fish and game would lead to reduced hunter and fisherman success and could result in some dissatisfaction with the recreation experience.

The power plant and its visible emissions would be obvious to travelers on some segments of Highway U-24 and to viewers in areas of Class A scenery on the Fishlake National Forest, Capitol Reef National Park, and the BLM proposed Hondu Primitive Area. The power plant would be considered a landmark of interest to some and an aesthetically degrading intrusion to others. Atmospheric discoloration and reduction of visual range would degrade scenic value of high quality scenic areas in the region.

The transmission system would make 36 major highway crossings, and would parallel major highways I-15 and U.S. 93 for 160 miles in Utah and Nevada where it would be visible (medium to high contrast) to travelers in 15,145 vehicles daily. One proposed line would parallel U.S. 93 for 45 miles and would create a "tunnel effect" in combination with an existing line on the opposite side of the highway. The lines would be visible (medium to high contrast) from several communities in Utah, Henderson, Nevada (low contrast), and Apple Valley, California (medium contrast); portions of 25 recreation attractions or areas of high scenic quality; and portions of 38 areas with potential for wilderness designation (low to high contrast).

The coal haul railroad would be a visual intrusion on the proposed Hondu Primitive Area and the Interstate Highway 70 (I-70) corridor. Along I-70 the resulting high contrast would be visible to passengers in 1,300 vehicles daily.

The presence of the proposed Moroni microwave station would reduce high aesthetic values in the area surrounding the station.

Recreation and Aesthetics

Outdoor recreational use would increase within the region. Additional recreational pressures would occur at developed sites presently being used at greater than 20 percent of their design capacity, increasing use to 40 percent or more at many of the sites, which would result in overcrowding and deterioration of the environment and facilities. Overcrowding and deterioration would be intensified at sites presently being used at greater than 40 percent capacity.

The appeal of recreation areas within the Sevier Desert would be reduced for some visitors. The increase in permanent population would result in increased ORV, hunting, and other dispersed outdoor activity. Additional competition for available fish and game would likely lead to less hunter and fisherman success and a resulting dissatisfaction with the recreation experience.

The power plant stacks, buildings, and emissions would be visible (high contrast) from U.S. Highway 50. The plant would be seen (low to high contrast) from other surrounding highways, communities, and recreation attraction areas as far as 40 miles distant. It would be considered a landmark of interest to some and an aesthetically degrading intrusion to others. The transmission lines would cause visually adverse manmade contrast in or near sensitive areas such as major travel routes, primary highway crossings, high-quality scenic areas, communities, or in areas with recreational values.

Where proposed transmission lines would parallel existing lines, additional contrast would generally not add appreciably to present contrast, but would make disturbance more obvious. The power transmission systems would make 42 highway crossings in areas of low-quality scenery that would be viewed by 121,545 passengers in vehicles daily. In all areas aesthetics values would be somewhat reduced (medium contrast) although the areas have already been disturbed. The lines would be visible from several communities in Utah (medium to high contrast); Henderson, Nevada (low contrast); and Apple Valley, California (medium contrast). The transmission systems would be visible (low to high contrast) from 26 adjacent recreation attractions or areas of high quality (Class A) scenery and from portions of 36 areas with potential for wilderness designation (low to high contrast).

Land Use

Up to 434 acres (37 percent) of the irrigated land east of Capitol Reef National Park in Wayne County could be subdivided into small non-agricultural developments. An additional 133 acres (less than 0.05 percent) of agricultural land in Emery County would be occupied by the proposed railroad.

In the regional setting, 33 areas with potential for wilderness or other special designation may receive additional ORV and other visitor use, resulting in degradation of wilderness value or other values for which they are being protected. Loss of water flow could reduce or eliminate the potential of the Dirty Devil River for Wild and Scenic River designation.

Should the proposed Moroni microwave station be built, primitive values within a portion of the proposed Hondu Primitive Area would be lost.

No adverse impacts on mining or other mineral resource extraction operations have been identified.

The proposed Salt Wash Transmission System would pass through the following six areas with potential for wilderness designation: five BLM Wilderness Study Areas (WSAs), and one uninventoried BLM Roadless Unit. Construction of transmission lines would impair wilderness character and designation suitability in the WSAs. Designation suitability of the roadless unit could be impaired adjacent to the line. Any impairment of wilderness suitability on areas having wilderness character would not be allowed prior to completion of the wilderness review and Congressional decision. Alternate routing would avoid impacts to wilderness character in WSAs.

Land Use Plans and Controls

The proposed railroad would cross I-70, conflicting with visual resource management objectives recommended in the BLM San Rafael Resource Area MFP. Proposed powerline activities would be in conflict with current BLM management objectives in nine areas.

The BLM planning system allows for consideration of new proposals. Alternatives are presented in this environmental statement which would avoid conflicts for some planning units; however, other plans would require revision in order for the conflicts to be resolved. Any revisions would be made following agency regulations, procedures, and policies. For BLM a policy would be followed which would utilize the environmental statement process as a mechanism for considering planning recommendations and trade-offs. An approval of the proposal and/or alternatives analyzed in the environmental statement shall also be a decision to amend the plans.

Land Use

An annual maximum of 44,700 acre-feet of irrigation water would be transferred from agricultural use to industrial use and would remove up to 7,760 acres of agricultural land from production. As compared to 1977 Utah harvest figures, crop losses would be equivalent to 1 percent of the alfalfa, 41 percent of the alfalfa seed, 3 percent of the grain, and 2 percent of the corn and potato production in Utah.

In the regional setting, 18 areas with potential for wilderness designation may receive additional ORV and other visitor use, resulting in degradation of values for which they are being protected. No adverse impacts on mining or other mineral resource extraction operations have been identified.

The Lynndyl Transmission System would pass within the following four areas with potential for wilderness designation: three BLM Wilderness Study Areas (WSAs) and one BLM Roadless Unit. Construction of transmission lines within these areas would impair designation suitability of the WSAs and the Roadless Unit adjacent to the line. Any impairment of wilderness suitability would not be allowed prior to completion of the wilderness review and Congressional decision on areas having wilderness character. Alternative routes would avoid WSA and Roadless Unit impacts.

Land Use Plans and Controls

The power generating station and support facilities are not compatible with Millard County's Zoning Ordinance Number 78. The area's current designation is Open Range and Forest (RF-1), and a zoning variance would be required for plant construction. The transmission routes conflict with BLM management objectives in five areas.

Both Forest Service and BLM planning systems allow for consideration of new proposals. Alternatives are presented in this environmental statement which would avoid conflicts for some planning units; however, other plans would require revision in order for the conflicts to be resolved. Any revisions would be made following agency regulations, procedures, and policies. For BLM a policy would be followed which would utilize the environmental statement process as a mechanism for considering planning recommendations and trade-offs. An approval of the proposal and/or alternatives analyzed in the environmental statement shall also be a decision to amend the plans.

Human Resources

Population

The 1987, peak Wayne County population is estimated to reach 10,800, of which 83 percent would result from the construction phase of IPP. IPP's operational phase (from 1990 on) would add a total of 3,170 permanent residents to Wayne County (63 percent of the total population).

Employment

At the peak of the construction period in 1986, IPP would increase total employment in Wayne County by 4,963 jobs (95 percent). The 1990 project-related direct and secondary employment would be 90 percent of the total employment for the county.

Utilities

A water treatment plant and distribution system, delivering at least 2.24 million gallons per day (MGD), would be required, as well as a sewage treatment plant and sewer lines with a capacity of 0.94 MGD. All solid-waste disposal facilities in Wayne County are open dumps. Either present sites would have to be converted to sanitary land-fills, or space acquired for new facilities. The need for these changes will occur regardless of the demand on solid waste facilities created by IPP.

Infrastructure

The present Wayne County schools' capacity would be exceeded by 1,762 students in 1987. One hundred percent of those students would be attributable to IPP. There would be a need for construction of at least two new schools, one elementary and one junior-senior high school, or for expansion of the present junior-senior high school.

The IPP-related population is expected to create a need for a maximum of ten additional law enforcement officers, a police station, and five police cars. An additional fire station with three pumper trucks, two other vehicles, and about 15 to 20 volunteer firemen would also be required.

Because the construction work force would be larger than the permanent one, determination of the proper size of facilities and the staff required for service delivery is a complex problem.

Human Resources

Population

The 1987 peak population is estimated to reach 15,440, 32 percent of which would result from IPP. IPP's operational phase (from 1990 on) would add a total of 2,250 permanent residents to Millard and Juab counties (10 percent of the total population).

Employment

At the peak of the construction period in 1986, IPP would increase total employment in Millard and Juab counties by 3,335 jobs (38 percent). The 1990 project-related direct and secondary employment would be 14 percent of the total employment for the two counties.

IPP also would bring about shifts in the distribution of Millard County employment. Higher-paying construction employment would temporarily be Millard County's largest employment sector.

Utilities

It is estimated that IPP-related population growth would require water for 830 dwellings and an additional 1.32 million gallons of culinary water storage capacity in the Delta-Lynndyl area by 1986. Waste-water treatment capacity would need to be expanded by 44 percent in the Delta-Lynndyl area and by 75 percent in the Eureka area to service peak-year population. Nephi and Fillmore area municipalities could absorb the anticipated growth.

All solid-waste disposal facilities in Millard and Juab counties are open dumps; either present sites would have to be converted to sanitary landfills, or space acquired for new facilities. The need for these changes will occur regardless of the demand on solid waste facilities created by IPP.

Infrastructure

IPP would add to a crowding problem in the schools that will already exist by 1982. The present schools' capacity would be exceeded by 1,255 students in 1987; 100 percent of those students would be attributable to IPP. Fifty-six new teachers would be needed to maintain present student-teacher ratios.

In the Delta-Lynndyl area, IPP-related population is expected to create a need for a maximum of eight additional law enforcement officers during the peak construction period, but only three additional officers during the post-1990 operation phase of the project. A maximum project-related need for one additional officer would be anticipated in the Nephi and Fillmore areas. The Delta-Lynndyl area would need an additional fire pumper rated at 500 gallons per minute (g.p.m.), and the Nephi area would need an additional 250 g.p.m. pumper to continue to meet pumping capacity standards.

Because the construction work force would be larger than the permanent one, determination of the proper size of facilities and the staff reqired for service delivery is a complex problem.

Public Health and Professional Personnel

At least two doctors, two dentists, seven to ten nurses, and one small hospital would be needed.

Housing

At peak population (1987), approximately 2,491 additional permanent and temporary housing units would be needed to serve the IPP-related population. The permanent IPP-related population would demand only 826 additional housing units, or 1,565 fewer units than required at the peak of construction. The difference between the demand for single-family homes at the population peak and the operation and maintenance phase would be filled by group quarters for single workers or by mobile homes.

Local Government and Finance

The increases in population, housing, and economic activity in the Wayne County area would affect local government administration. These effects would be translated into a need for additional personnel, materials, supplies, and space. Present local governmental operations and procedures would be subjected to stress, especially during peak IPP construction.

Legal questions regarding obtaining and distributing of revenues needed to finance community services are unresolved at this time.

Public Health and Professional Personnel

West Millard Hospital would be near capacity at the year of IPP's peak construction. However, some of the 18 existing long-term care beds could be used to meet the temporary peak demand. The Nephi area's Juab County Hospital and the Fillmore Hospital would be able to absorb the peak year demand without exceeding the optimal capacities of the present facilities.

The Delta-Lynndyl area is the only area which would require additional medical personnel. The peak-year requirements attributable to IPP would be two physicians, three registered nurses, one licensed practical nurse, and one mental health worker in addition to the present number in the area. IPP-related permanent population from 1990 through the plant's operation phase would require one physician, one registered nurse, and one mental health worker to maintain current personnel-to-population ratios for rural areas of Utah.

Housing

At peak housing demand, approximately 2,210 housing units would be needed to serve the IPP-related population. Of these units, 460 would be permanent and the remaining 1,750 would be temporary units such as campers, trailers, and man-camp units which would be removed as they become surplus.

The permanent IPP-related population would demand only 460 permanent and 140 temporary housing units, or 180 fewer permanent units than demanded at the peak of construction. If all permanent housing required for workers at peak construction was built, 30 percent of the permanent units would become vacant excess housing between 1988 (when construction activity declines) and 1993 (when projected non-IPP related population growth would reach levels sufficient to utilize the excess units).

Local Government and Finance

Local Government

The increases in population, housing, and economic activity in the impact area would affect local government administration, especially in Millard County and the cities and towns in the Delta-Lynndyl area. These effects would be translated into a need for additional personnel, materials, supplies, and space. Present local governmental operations and procedures would be subjected to stress, especially during peak IPP construction. The most pressing needs would probably be personnel and space. It is anticipated that the City of Delta and Millard County would have to hire two additional full-time persons for each jurisdiction.

Legal questions regarding obtaining and distributing of revenue needed to finance community services are unresolved at this time.

Quality of Life

Quality of life impact projections are made on the basis of what has occurred in other sparsely populated, culturally homogeneous rural areas that have experienced rapid population growth because of energy development projects. The new jobs that would be made available by the proposed project, as well as the increased indirect employment opportunities, would make it possible for many local residents to remain in or return to the area. Increased employment and income opportunities associated with the proposed project would improve the quality and variety of important local services.

On the opposite side, however, rapid energy-related growth would be typically accompanied by inflation and higher prices. Many older residents of the area, who must live on fixed incomes, would be unable to benefit from the higher wages and would experience the most negative impacts to quality of life.

The construction phase of the project would result in a more heterogeneous area population. Other communities in Utah have also experienced problems concurrent with rapid population growth. Crime has increased at a rate that is significantly higher than the increase in local population. (However, delinquency rates--often an excellent barometer of problems in a community--have not increased as rapidly as has the population.) Increased mental health problems have been noted by the area comprehensive mental health clinics, and increased drinking problems are reflected in increased arrest rates, more fights and disturbances, and high absenteeism from work.

Thus it is anticipated that increased crime rates, suicide, divorce, and personal problems would be experienced as a result of population growth and diversification. Many of these increases would be a function of the importation of a more susceptible population than a direct function of growth. For example, divorce rates in energy boomtowns usually go up--often a result of the fact that newcomers are usually younger, have fewer children, and are more likely to come from different religious backgrounds.

Coal Source Area-Socioeconomics

The coal source, Carbon and Emery Counties, would see a population increase of at least 10,000 people. Population projections, however, have become a matter of disagreement between State and local government; therefore, quantification of impacts under this section has not been attempted. Unlike the population associated with the plant site, the coal-related population would grow gradually to a stable level. This increased population, however, would be added to an area already stressed by rapid population growth.

Income in the coal source impact area would increase but would not be evenly distributed among the population. People with low or fixed incomes would be relatively worse off as higher incomes would produce higher prices.

Physical facilities for community services (such as municipal water, sewer, and schools), which are already strained, would have additional demand put on them. This situation could be aggravated by the fact that the coal mines do not add significantly to the local tax base. A population increase of 10,000 would require approximately 3,000 dwelling units in an area already experiencing housing shortages.

Varying levels of resident satisfaction were registered in community surveys, indicating possible adverse impacts on the lifestyle of area residents resulting from increasing population. Crime rates, alcohol and drug abuse problems, mental health caseloads, and family problems have all increased concurrent with recent population growth in the area. The additional population resulting from IPP-related coal mining would add to these problems.

Quality of Life and Coal Source Area

The effects of construction of IPP at the Lynndyl Site would be essentially the same as described for Salt Wash.

Human Health and Safety

Primary Project Area

The following numbers and types of accidents could be expected at the plant site:

	Construction (Peak Year)	Operation and Maintenance (Average Year)
Accidents	453	31
Lost Work Day Accidents	149	8
Fatalities	0.73	0.128

Potential for traffic accidents would also increase. During the peak population year (1987), 324 automobile accidents and 3 traffic deaths could be expected. During the operation of the plant, 150 accidents and 1 fatality per year could be expected.

Train operation would increase ambient noise levels in the vicinity of the tracks. Potential collisions with animals and vehicles, and heavy equipment accidents would be safety hazards associated with the railroad.

Chemical oxidants, audible noise, and electromagnetic and electrostatic induction would be produced by the transmission line but would be below the levels generally considered hazardous to human health and safety. Other potential hazards are aircraft collisions with the lines, damage and injury due to collapse of towers or falling conductors, and electrocution.

There could be 1.2 fatal accidents and 218.2 non-fatal work day losses per year resulting from IPP related coal production.

Human Health and Safety

The effects of construction of IPP at the Lynndyl site upon human health and safety would be similar to those described for Salt Wash.

SECTION 2--CHAPTER 9

PUBLIC COMMENTS AND RESPONSES

The DES was filed with the Environmental Protection Agency (EPA) on July 10, 1979, which provided for a public comment period to September 10, 1979.

All written comments and the public hearing transcripts have been sent with the FES to the Secretary of the Interior and the EPA. They are also available for inspection at the State Director's Office, BLM, Salt Lake City; the BLM Richfield District Office; and the BLM Office of Public Affairs, Washington, D.C.

All comments were reviewed and considered. Those which presented new data, questioned findings of analyses, or raised questions or issues that related directly to the adequacy of the DES were responded to and were used for text revision. No response was given to those comments which did not provide additional information or present factors for additional analyses. Many comments were similar in substance, consequently, the reader is referred to the initial transcript or letter response. The comments are numbered in a two-number system. The first number represents the transcript or letter while the second number represents the comment.

a. Public Hearings

The Bureau of Land Management conducted six formal public hearings on the DES in Loa, Utah on August 14, 1979; Delta, Utah on August 15; Salt Lake City, Utah on August 16; Las Vegas, Nevada on August 17; Los Angeles, California on August 20; and Victorville, California on August 21. The Chief of Planning and Environmental Coordination, BLM Utah State Office, Gerald Magnuson, presided over all of the hearings except the one in Salt Lake City which was presided over by the Utah BLM Associate State Director, William Leavell. All hearings were recorded by a court reporter. The full hearing transcripts are available for review in the Richfield Utah District Office. Among the persons attending the public hearings, the following individuals presented testimony or were members of the panel:

Loa, Utah

Panel

Lynn Leishman	Team Leader, IPP ES
Greg Thayn	Technical Coordinator
Margaret Matthies	Outdoor Recreation Planner
Alan Larson	Air Quality

Testimony

1.	Larry J. Seibert	Six County Commission
2.	Dwight Williams	Wayne County Water Conservancy District
3.	Farrell Chappell	Wayne County Commission
4.	Laska Keele	Self
5.	Mrs. Jack Hendrickson	Self
6.	Spencer Rees	Garkane Power Association
7.	Kenneth Rees	Wayne County Commission
8.	Richard Lawrence	Wayne County Water Conservancy District
9.	Craig Chappell	Wayne County Farm Bureau
10.	Earl Brown	Loa City Council

Delta, Utah

Panel

Lynn Leishman	Team Leader, IPP ES
Greg Thayn	Technical Coordinator
Margaret Matthies	Outdoor Recreation Planner
Jim Christensen	Water Resources

Testimony

11.	Roger Walker	Sevier River Commission
12.	Bill Nielsen	Central Utah Water Company
13.	Randy McKnight	District Four Law Enforcement Council Six County Economic Development District
14.	Carol Nielson	Self
15.	Allen Nielsen	Self

Salt Lake City, Utah

Panel

Lynn Leishman	Team Leader, IPP ES
Greg Thayn	Technical Coordinator
Margaret Matthies	Outdoor Recreation Planner
Roy Edmonds	Socioeconomics
Alan Larson	Air Quality
Jim Christensen	Water Resources
Bruce Campbell	Los Angeles Dept. of Water and Power

Testimony

16.	Eugene K. Veselka	Ute Energy Company
17.	Peter Hovingh	Self
18.	Gordon Anderson	Friends of the Earth
19.	Carl Lyman	Self
20.	James Catlin	Sierra Club

Las Vegas, Nevada; Los Angeles, California; Victorville, California

Panel

Lynn Leishman	Team Leader, IPP ES
Greg Thayn	Technical Coordinator
Margaret Matthies	Outdoor Recreation Planner
Roy Edmonds	Socioeconomics
Craig Harmon	Cultural Resources
Bruce Campbell	Los Angeles Dept. of Water and Power

Testimony

No testimony was offered at any of these hearings.

Response to Transcript Comments

1. Larry J. Seibert, Six County Commission

1.1 Comment: On Page 1-82, on the Table 1-19. You indicate that in Wayne County a zoning variance would be required. Wayne County has no zoning ordinance, so I think it would be more appropriate if you put, "zoning variance would be required if ordinance were adopted."

Response: Revised page showing deletion (arrow) included in Addendum.

1.2 Comment: And then next to that you have the authority listed as the county master plan adopted October 1976. A master plan is not a regulatory document. Master plan is simply a guide for development. Zoning is the authority. The master plan is not regulatory, zoning is the authority. And again only if adopted. So in that table it should be corrected to show those.

Response: See Transcript 1 Response 1.

1.3 Comment: We have not done anything specific as far as specific town planning. And I think the EIS, the Final EIS ought to reflect the fact that it is in concept only and not any specific townsite work done on it at all. I think that would help clarify it.

Response: Since no town planning has been done, the information has been deleted. Revised page (Vol. 1, Page 2-75) showing deletion is included in the Addendum.

1.4 Comment: Table 2-28. We take real exception to those because our current trends indicate county population is increasing and we see nothing to indicate that trend reversing, especially in light of uranium development and tourism and other things that are happening in the county.

Response: Comment noted; following is Table 2-28 which includes figures from the State of Utah, the Utah Population Work Committee and the U.S. Census Bureau.

TABLE 2-28

Wayne County Population Without IPP[a]

	Bureau of Economics and Business Research[b]	Utah Population Work Committee	U.S. Census Bureau
1980 population	1,870	2,009	2,065
1985 population	1,850	2,726	2,464
1990 population	1,830	3,222	2,941

[a]Future county population growth or decline is tied to changes in basic employment. Thus, projections of population are based on conditions assumed for each basic employment sector.

[b]Analysis of impacts is based on Bureau of Economic and Business Research figures. UPWC and U.S. Census figures included for comparison only.

However, the analysis of socioeconomic impacts may vary significantly depending on the basic assumptions and methods used.

The socioeconomic portions of the IPP Salt Wash Site, and the Environmental Statement: Development of Coal Resources in Central Utah, USGS, 1978 (which analyzes the impacts of IPP coal development) were prepared under the same contract by the State of Utah. Therefore, to maintain continuity, the State of Utah analysis must be retained.

It should be noted that analyses used in the EIS are in no way binding on local governments who may use whatever analysis they choose for impact planning.

1.5 Comment: On page 3-40 you show distribution of population in Wayne County communities, assuming construction of a new town. The chart breaks out the population going to various communities. We feel that the chart is a little inaccurate, because you show a high number of individuals moving to Loa and -- or an equal number moving to Loa as you to Bicknell and Torrey, and we feel that Bicknell and Torrey would be more appropriate because they are in fact closer to the plant site. I don't think it's equal across the board. I think the further away you get the fewer people you are going to have. So I think that chart needs to be looked at. And I think the unincorporated is not high enough.

Response: Population distribution projections were furnished by the State of Utah. See Transcript 1 Comment 4.

1.6 Comment: On page 3-44, again you indicated that 85 percent of the population would be held in a new town and about 15 percent in existing communities or counties in the unincorporated area. I don't feel like an 85/15 split is accurate. I think there would be a larger percentage going to Hanksville should a new town be constructed.

Response: The exact distribution of the new population is subject to individual projections; however, for analysis purposes the 85/15 split was assumed.

Also, see Transcript 1 Comment 4.

1.7 Comment: Again, on Page 8.1-42 you again showed the legal authority needed for power plant construction, again citing the authorities of the Millard County master plan, dated October 1969. Again master plans are not regulatory documents, they are simply advisory. The zoning is the authority.

Response: Comment noted; revised page (Vol. 2, Page 8.1-42, Table 8.1-14) containing changes (underlined) is included in the Addendum.

1.8 Comment: On Page 8.2-56 under regional setting, land use controls and plans, second paragraph. I think something should be said there about a new county planning and zoning commission being organized and also some of the towns now having planning and zoning commissions. They have also now hired a building inspector, and I think these comments would be relative and pertinent to someone reading the final EIS because it would show more effort on the local part to help prepare for anticipated energy development.

Response: Comment noted; revised page containing change (underlined) is included in the Addendum.

2. Dwight Williams, Wayne County Water Conservancy District

2.1 Comment: So with that in mind, we would like to see if you could possibly inject it some way in the EIS that we need industrial use to help develop this water.

Response: Comment noted; revised pages (Vol. 1, Page 2-94) containing change is included in the Addendum.

8. Richard Lawrence, Wayne County Water Conservancy District

8.1 Comment: The draft EIS statement states that 30,000 acre-feet of water would be taken from the Fremont River and would reduce the river's downstream flows by 57 percent. We object to the inference that such a withdrawal of water is a negative impact. We call attention to the fact that in August of 1975 the water making policy board of the State of Utah officially approved the concept of a multi-purpose project and assigned the water rights to the conservancy district for the express purpose of construction of a joint venture project with the sponsors of the IPP.

Response: The analysis that the Fremont River's flow would be reduced 57 percent is not in itself negative. It is a statement of impact. It identifies what would happen to water resources downstream from the proposed diversion. Identification of what would happen to water resources is necessary to identify the impacts that the reduction in water flow would have on vegetation. In Vol. 1, Pages 3-19 and 5-4, the impact that the reduction in water flow would have on vegetation is identified. In Vol. 1, Page 3-23 and Page 5-5, the impact the reduction in water flow would have on wildlife resources is identified. The impact that the reduction in water flow would have on Special Designation values have been included in the text in Vol. 1, pages 3-33 and 5-7 and Vol. 3, Page 12. The revised pages containing changes (underlined) are included in Addendum.

8.2 Comment: We resent the suggestion in the statement that the water could or should be used somewhere else other than in Wayne County.

Response: The intent of this section was not to imply that water could or should be used outside of Wayne County but to point out the relationship to other potential uses of the same water, as required by NEPA Evaluation of short term/long term relationships.

10. Earl Brown, Loa City Council

10.1 Comment: And also, I represent Brown Brothers Construction and I would also like to--I can't figure out people's belief that--I am in the construction business, I am knowledgeable enough to know that probably we burn up more fuel shipping the coal to Lynndyl or shipping coal from the Kaiparowits than they would make over there. I mean it just don't hold true but I can't believe that our government agencies can't see where all the railroads that would have to be built and would cut clear across the whole State of Utah, go from Emery County across to Lynndyl and from Kaiparowits to Lynndyl, have they ever studied these costs and impacts that this would create, putting the railroads through those areas?

Response: To get a relative comparison of the extra energy needed to transport the coal to Lynndyl, refer to Vol. 1, Table 6-1 on Page 6-2. All of the factors listed, except "unit train transportation," would remain constant for the Lynndyl site. Transportation to Lynndyl would be roughly 150 miles instead of the 47 miles given on the table, therefore, the -630.6 figure would become -2,012.6. The "Estimated Total Energy Lost," "Energy Delivered," and "System Efficiency" figures would then become -323,282, 82,318, and 20.3 percent, respectively. Even at the greater distance, the "Energy Delivered" is almost 41 times greater than the energy used to transport the coal.

The environmental impact of a new railroad has been studied and reported in the Environmental Statement: Coal Development in Southern Utah (USGS, 1978). However, the major impacts envisioned would not occur because the project proponents indicate that hauling coal from the Kaiparowits region is not considered a viable option for the project at this time. The coal from the Carbon-Emery region would be shipped over mostly existing railroads (Vol. 2, Page 8.1-25).

11. Roger Walker, Sevier River Commission

11.1 Comment: Under the water resources section on page 8.3-20, the DMAD Wells, the comment is made that the project would cause increased pumping. There will be increased pumping but there would be increased pumping whether or not there was a project.

Response: It is assumed that the DMAD wells would be further developed whether or not IPP comes on line (Vol. 1, Page 8.2-75). However, IPP does propose to use a portion of the 13,900 acre feet of water and it is appropriate to discuss the possible impact of the increased pumping associated with this use. The text in Vol. 1, Page 8.3-20 has been revised to indicate IPP's use of water from increased pumping. Revised page containing change (underlined) is included in the Addendum.

11.2 Comment: Under land uses Table 8.2-11 it lists the irrigation land within the DMAD Company service area as Delta 8,530 acres, Melville, 9,060 acres, Abraham, 15,580 acres, Deseret, 17,860 acres.

The Intermountain Power Project Hydrology Report, that is Table B-5, land use Delta area, 1963, Hamers, et al., has Delta cultivated and idle 18,800 acres. Melville 8,980 acres, Abraham 8,940, Deseret 16,400.

I was unable to look at the two reports and find there was that difference. But for some reason or another, you have left approximately 10,000 off the Delta Company. I think this needs to be corrected.

Response: Table 8.2-11 is incorrect insofor as the company names and acreage are concerned and has been corrected. The revised page (8.2-50) is included in the Addendum. The data were taken from Table B-6 of the Intermountain Power Project Hydrology Report and are based on average conditions. Table B-5 reflects a better than average water supply and was not used for the long-term impact analysis.

11.3 Comment: Also, in a Table 8.2-12 it lists the DMAD service area cropping pattern and consumptive use of water and the annual yield per acre probably represents an average yield that could be projected with present farming methods. I don't think the yield was entirely realistic. For example, it gives a yield of 400 pounds alfalfa seed per acre and then on the retired

acreage it said 40 percent of the retired acres would be alfalfa seed. And if you multiply the 4,280 acres by the 400 pounds by acre of alfalfa seed times 0.4, you get a yield of 672,000 acres.

And then they proceed to compare this with a 1977 crop production alfalfa seed which might be totally different in acreage and totally unrealistic. And they come to the conclusion that that would represent 51 percent of Utah's alfalfa seed production.

I think it can be stated as a fact that Delta area farmers are not going to retire 4,280 acres that would produce 51 percent of Utah's alfalfa seed. I think the proper analysis would have been more appropriate to assume that the 91.5 percent of acres remaining would be more productive and the 8.5 percent that is retired, and therefore, your reduction on the alfalfa seed would be somewhat less than a 8 1/2 percent.

Response: The alfalfa seed crop-yield per acre figure of 400 pounds presented in Table 8.2-12 is based on an average water year. The yield during a high water year is approximately 600 pounds, while the yield for a low water year is only about 250 pounds. This information is taken from the Intermountain Power Project Hydrology Report, Hamer, et al., 1978.

The statement in Vol. 1, Page 8.3-36 that there would be a loss in crop production equivalent to 51 percent of the State's alfalfa seed is in error. Compared to 1977 Utah harvest figures, this loss would be equivalent to 41 percent of the state's alfalfa seed under Scenario 1 and 28 percent under Scenario 2. Compared to 1978 harvest figures, this loss would be equivalent to 30 percent under Scenario 1 and 21 percent under Scenario 2. Compared to 1979 harvest figures, the loss would be equivalent to 18 percent under Scenario 1 and 12 percent under Scenario 2.

Revised page containing changes (underlined) is included in the Addendum.

11.4 Comment: One more comment on that. Then you proceed to list the net earnings based on what I think is unrealistic approach. I think every area has some unprofitable operations and I don't think that the Delta area is any exception. I think there are more than 4,280 acres that do not show a profit in a farming operation at the present time. And I think the net earnings impact, if you took out marginal land on the net earnings might well be zero.

Response: This point was recognized in the DES analysis. However, it could not be assumed that all agricultural land taken out of production would be marginal. It was, therefore, decided to use the average production as a probable "worst case" analysis. The actual economic impact would probably be between zero and the projected decrease figure cited in the DES.

11.5 Comment: On Page 8.2-28, the water quality, the return flows at the Lynndyl gauge is listed as between 3,000 and 6,000 per million. The return flows at the Lynndyl gauge are between 2,300 and 3,100.

Response: Comment noted; revised page containing change (underlined) included in Addendum.

11.6 Comment: And then a statement is made that Gunnison Bend functions as a drain when drawn down at the season's end resulting in poor water quality. I would like to state that the river above Gunnison Bend Reservoir always functions as a drain. Degradation of water quality is not notable when you

are delivering high quantity through Gunnison Bend. However, anytime the end-flow ceases, a degradation occurs regardless of water level.

Response: Comment noted; revised page showing deletion (arrow) included in Addendum.

11.7 Comment: The top of Page 8.3-21 the first sentence states that Gunnison Bend water quality would remain unchanged. It's elementary if the water quality in DMAD is improved, then you release DMAD at Gunnison Bend, DMAD has to improve.

Response: Comment noted; revised page containg change (underlined) included in Addendum.

11.8 Comment: There was one other comment, that is under 8.5, Page 8.5-2 under adverse impact. It talks about adverse impact of the seepage lost to the open drain system of 2,100 acre-feet. The most expensive project on the Sevier River was the drainage system in the Delta area to remove the salt. 2,100 acre-feet not put into the water table is a major benefit for the drainage pumps. That might be adverse to the Topaz and Slough area, but it's a major benefit to our drainage system.

Response: Seepage loss comment noted; revised page showing deletion (arrow) included in the Addendum. There would be an impact on wetland vegetation fed from the source as stated in Vol. 1, Page 8.5-3 under vegetation section.

12. Bill Nielsen, Central Utah Water Company

12.1 Comment: On page 8.3-23 you make the statement that 7,760 acres of irrigated land in eastern Millard County would be taken out of production. I think that's a mistake, because later on you make this statement that that would be the total amount, I think that anyway, there is not going to be that many acres taken out in east Millard County.

Response: Table 8.3-9 in Vol. 2, Page 8.3-34 gives a breakdown of the estimated agricultural land which would be removed from production in both the DMAD and CUC service areas. Tables 8.2-11 and 8.2-13 show total acres of irrigated lands in the area. The total acres removed from production in Millard County under both scenerios 1 and 2 would be between 7,250 and 7,760 acres. These estimates are based on the transfer of water from agricultural purposes to IPP and the average diversion of water that would result. The Utah State Engineer could require specific lands to be retired from irrigation as soon as their water rights have been sold to IPP.

13. Randy McKnight, District Four Law Enforcement Council, Six County Economic Development District

13.1 Comment: Page 8.2-69 addresses the public safety situation as it currently exists in Millard County. One of the statements in those paragraphs say that, "no crime data exists for Millard County." That is not quite correct. Crime data for 1976, '77, and '78 does exist and can be obtained through the management and administrative statistics reports published by the Utah Council on Criminal Justice Administration in Salt Lake and the Uniform Crime Report published by the Department of Public Safety of the State of Utah.

Response: Data have been obtained from the sources you suggested and the crime rate for Millard County has been added to Vol. 2, Page 8.2-69. Revised page containing change (underlined) included in Addendum.

13.2 Comment: The third paragraph states that, "there are 16 law enforcement officers in Millard County." I believe it should be noted that four of those are part-time officers. Since the study uses a 1.9 officer per thousand population for projecting future needs, this should be probably clarified that there are no 16 full-time law enforcement officers in Millard County.

Response: Comment noted; revised page (Vol. 2, Page 8.2-69) containing changes (underlined) included in Addendum.

13.3 Comment: The third point there is no mention under public safety of corrections or detention facilities. There is currently a great deal of concern in Millard County for the jail situation. The additional population stemming from IPP impacts would heighten concerns for the adequacy of the currently existing jail facility. And our suggestion is that this aspect should also be addressed in the impact statement.

Response: Comment noted; revised pages (Vol. 2, pages 8.2-69 and 8.3-50) containing changes (underlined) included in Addendum.

14. Carol Nielson

14.1 Comment: This is potentially the most serious impact that could occur on the residents of the communities in Millard County, that rates only one statement in the draft environmental impact statement.

In the socioeconomic analysis, dated January 31, 1979, prepared for IPP by Architects Alliance, on page 152 it states, "it has not yet legally been determined if the assessed evaluation of the IPP plant will or will not be added to Millard County for bonding purposes, although the plant will definitely generate tax-like revenue.

Response: The subject paragraph has been changed to more clearly reflect the seriousness of the impacts to community services if the required revenues are not available. The revised page (Vol. 2, Page 8.3-41) containing this change (underlined) is included in the Addendum.

14.2 Comment: The draft environmental impact statement does not address itself to the scenario of the county not having advance or in-lieu of advalorem taxes or bonding capabilities against the plant's assessed valuation. If in fact it is determined that the IPP plant cannot or will not pay advance advalorem taxes to alleviate the impact Millard County residents will suffer greatly through increased taxing of property owners and downgrading or total lack of services, such as solid waste removal, public health services, water, sewer, water and sewer hookups, undermanned police departments, inadequate fire departments, and overcrowded and under staffed schools. We will be penalized for lack of funds and the impact will be totally negative on the entire area.

Response: The analysis has only identified areas and magnitudes of impact based upon present infrastructural capacities. It would be impractical to try to predict detailed impacts in the individual infrastructural categories, either with or without front-end money.

Therefore, while the ES does not specifically address a "without" front-end money scenario, neither does it address a "with" front-end money scenario. However, it does acknowledge the possibility of the needed front-end money not being available and a decline in quality and quantity of community services.

15. Allen Nielsen

15.1 Comment: In reference to Page 8.3-20, the one entitled, "DMAD Wells,: it's our feeling, in analyzing the rights of Delta Irrigation Companies, that approximately 13,900 acre-feet increase would be really in the neighborhood of 17,000 acre foot of an increase.

Response: It was assumed that at a minimum an additional 13,900 acre-feet of water would be pumped from the DMAD wells in order to supply IPP with their needed portion. DMAD may pump more than that amount, as noted on Page 8.2-75 under water resources.

15.2 Comment: With regard to these scenarios on that same page of the purchase of the well water, especially concerning the scenario 2 why the well water would be purchased from the Lynndyl area and thereby additional acreage would--or additional value would be taken out, we feel like that needs some revision; that it doesn't hold that there would be a greater loss in value of agriculture crops by the implementation of scenario 2 over scenario one.

Response: The difference in amount of land taken out of production and subsequent value of agricultural crops was based on an assumed difference in amount of water diverted per acre in the two different locations. A diversion of 3.06 acre-feet per acre was used in the DMAD area and 3.43 acre-feet per acre in the Lynndyl-Leamington area. This assumption was based on existing records and a sampling of water rights of various wells.

17. Peter Hovingh

17.1 Comment: I'm also greatly distressed, in this case at the Bureau of Land Management, for off-road vehicle unmittigable measures. Again, I have a strong feeling that if the state really cares at all about the land, if it cares at all about the quality of life, if there is any influential person in the state government who cares, then certainly the off-road vehicle could be managed, and there wouldn't be any unmittigable damage. And one way to manage that is to close off all areas 200 miles around the plant site, and also its transmission lines. We are concerned about energy. Off-road vehicles consume an awful lot of gas, probably enough to account for the Lynndyl-Salt Wash site.

Response: All vehicular activity necessary for construction would be controlled through stipulation. Vehicular activity by the applicant would be restricted to right-of-way and existing public roads. Cross-country vehicular travel would be prohibited. (See part s of "Measures Required of the Applicant by Federal Agencies," Vol. 1, Page 1-67.) This restriction applies to all phases of construction, use, and maintenance of the plant and its facilities.

Stipulation that new access roads be closed as designated by the appropriate official has been added to the FES under "Measures Required of the Applicant By Federal Agencies." Revised page (Vol. 1-67) containing changes (underlined) included in Addendum.

The DES does discuss two unmitigated impacts concerning off-road vehicle (ORV) activity: 1) ORV use in the secondary influence zone would increase due to population increase both during construction and plant operation, and 2) resource degradation would occur from this increase in ORV activity.

The environmental statement does not discuss measures that could mitigate these two impacts because neither impact could be controlled by any stipulation applied to the applicant. Rather, off-road vehicle management is the concern of the Federal agencies that manage lands within the secondary influence zone. Off-road vehicle activity is a valid recreational use of the public lands, and public lands would absorb most of the increase. In the environmental statement, the discussion of resource degradation from increased ORV activity (impact 2) is a worst-case analysis based on the fact that ORV activity would increase, and that where or when this activity occurs on public lands could not, at the present time be entirely controlled through management

Under the authority of Executive Order 11644 as amended by Executive Order 11989, (as well as by authority of several acts of Congress) Federal agencies manage off-road vehicle activity to protect lands in the influence zone. Organized ORV activities, such as a cross-country motorcycle races, require a written plan of action, assessment of environmental impact, mitigative measures, and monitoring plan before the event would be permitted. General ORV use is controlled through closure or restriction of certain areas for the purpose of habitat preservation, resource protection, critical watershed, public safety, wilderness preservation, etc. It is outside the scope of the ES, however, to identify where such future ORV closures should be made. Federal land management agencies include ORV management in their land use planning systems. Most National Park Service lands are closed to off-road vehicle activities. The Forest Service has completed travel plans for all National Forests in Utah. These plans, designating all Forest Service lands as open, closed, or restricted to off-road vehicle activity will be implemented in 1979. The BLM has begun an inventory that will result in the designation of all lands under its jurisdiction as open, closed, or limited to ORV activity. All BLM designations will be made and implemented by 1987.

Until all ORV designations are implemented, resource degradation would be expected to occur from the increase in ORV activity. Even after all ORV designations are implemented, resource degradation would occur, but would be better controlled as to where and when.

17.2 Comment: It has never been clear in this Impact Statement whether the farmers who sold their water to the IPP will now qualify for Central Utah Project water.

Response: Farmers would not be eligible for Central Utah Project water if they sell their water to IPP, according to the Utah State Engineer and the Bureau of Reclamation. Changes have been made to the water resources section in Vol. 2, Pages 8.2-75 and 8.5-6. Revised pages containing these changes (underlined) are included in the Addendum.

18. Gordon Anderson, Friends of the Earth

18.1 Comment: However, we would like to differ with the conclusion that the group has reached, that this environmental impact statement does conform with the provisions and the intent of the National Environmental Policy Act for basically two reasons: First of which is that the 1977 announcement by the Department of the Interior that consideration of the Lynndyl site would be

expedited essentially biased the entire NEPA review process, as is well clearly reflected throughout this document. While we certainly support the conclusion of the Department that the project should not be built in the midst of the Southern Utah parks region, forever spoiling pristine visiblity of these great national parks, we believe this should be more to the fulfillment of real energy needs than to just initiate the search to dump the project somewhere else away from the power plants. As a result, throughout the entire review process, since this announcement, the members of the study team as well as the entire public were all perfectly aware that the Department of the Interior's only interest was to approve the project at the Lynndyl site without the benefit of any examination for the real need for the power created by the plant by an independent study or any serious consideration of alternatives which could also meet the projected demand for electrical power.

Response: The load forecasts have been reviewed by the California Energy Commission and the Utah Public Service Commission. The need for this power has been verified by these independent reviews.

A potential fatal flaw in the Salt Wash site was identified early in the process which initiated a joint Federal-State effort to identify potential alternative power plant sites for IPP. At the recommendation of the Inter-agency Task Force on Power Plant Siting, the Lynndyl site was selected as a viable alterative site to Salt Wash. The Lynndyl site and ancillary facilities were then analyzed in accordance with NEPA to match level-of-detail of analysis with that of Salt Wash.

18.2 Comment: The second point I would like to make tonight is that the alternative section is especially deficient by briefly--and I mean very briefly, indeed-and separately enumerating the conservation and renewable energy resources which could meet the proponent's expected electrical demands. This study does not account for the fact that the combination of all these factors could well create or produce the same amount of power as could the plant at a greatly reduced cost to the economy as well as to the environment. For example, if the $3 billion to $4 billion cost of this project was spent on home insulation alone, the energy savings could result in the creation of some three times the electrical power a plant would produce. It is clearly obvious no attempt was made to evaluate or even consider the wealth of data and studies available regarding the existing conservation practices and renewable resource technology which would be implemented within the time frame of the project to supply the same amount of electrical power the proponents proposed to produce by this plant.

Response: The State of Utah has not yet adopted building efficiency guidelines which address energy conservation. The State of California has adopted standards (Titles 20, 24, and 25, California Administrative Code). In the California residential sector, the major impact from nonprice conservation is forecast to come from these State-mandated standards. Current building standards set minimum insulation requirements for new homes. Recently adopted residential appliance efficiency standards set maximum electricity consumption for various sizes of refrigerators, food freezers, and air conditioners. In addition, electric resistance space heating can no longer be installed in new residences unless it can be shown that its life-cycle cost is less than that for other energy sources such as natural gas or solar. This regulation effectively bans any new electric resistance space heating in California.

The applicant has indicated that virtually all of the participating utilities in IPP have initiated voluntary public information programs to point out to their customers conservation measures that may be implemented to reduce electricity consumption. These measures include such things as ceiling retrofit insulation, thermostat adjustments, solar space conditioning, and water heating.

Reductions from the impacts of nonprice conservation for the commercial sector and the industrial sector in California fall into two categories: 1) allowances for the impacts of State-mandated conservation standards and 2) utility-initiated programs. The State programs are aimed at reducing electricity consumption in new buildings and the utility programs are aimed at reduction of electricity consumption in existing buildings.

The California Energy Commission's (CEC) current regulatory energy conservation programs emphasize new building and new appliance efficiency standards. Some of the CEC's newer energy conservation programs are Residential Retrofit Insulation, Water Use and Water Heating, Load Management, Industrial Efficiency Audits and Residential Outreach Services. California participants in IPP are presently being evaluated for their feasibility and cost effectiveness. The CEC's proposed conservation programs would, to a degree, result in some reduction of energy usage (Draft Biennial Report, 1979, California Energy Resource and Conservation Commission).

An example of the effects of these energy conservation programs, is demonstrated in the load forecast for the City of Los Angeles which reflects both State-mandated appliance efficiency and building standards and the Department's own conservation program (Ref.: Letter dated April 3, 1978, James L. Mulloy, Chief Electrical Engineer and Assistant Manager, to Office of the Secretariat, California Energy Commission, transmitting Section E-15, Conservation, of the CFM II Demand Forecast for Los Angeles.) Consequently, the forecast has resulted in a projected net reduction in energy sales due to conservation in 1985 of 1887 gwh (8.9 percent) and in 1995 of 3053 gwh (10.4 percent). This projected reduction in electricity sales is in addition to an estimated annual conservation savings of 1,475 gwh which was originally realized during the 1973-1974 "Energy Crisis" and has since been maintained. Total sales grew by only 2.0 percent in 1973 and then declined by 14.3 percent in 1974. While caused in part by the impacts of the Arab Oil Embargo and the recession during 1974, this sharp decline was primarily the result of the Mandatory Curtailment Ordinance approved by the Los Angeles City Council that was in effect from December 1973 to May 1974. This Ordinance required a decrease in electricity consumption from the previous year by residential and industrial customers of 10 percent and by commercial customers of 20 percent.

The total effectiveness of these mandatory and voluntary conservation programs is a matter of speculation since it does not appear that they can be considered as an alternative to replace additional conventional baseload energy resources. Conservation cannot fully offset the need for base-load capacity and energy; but it can help reduce the need for operating older, less-reliable, inefficient and expensive existing oil-fueled capacity. As noted previously, energy conservation is factored into projected energy demand forecasts.

Additional conservation measures, beyond those on which the participants' load forecasts were based, will be considered if legal and financial arrangements can be made by the various levels of government to implement and enforce such measures. It should also be pointed out that there are several other objectives of IPP besides providing base-load capacity and energy to meet the participants' projected load growth as discussed in DES Appendix I-1, IPP Need for Power.

The participants are required by law to provide electric energy to their respective service areas. For example, the Charter of the City of Los Angeles in Section 220 states in part:

> The Department of Water and Power shall have the power and duty: (1) to construct, operate, maintain, extend, manage, and control works and property for the purpose of supplying the city and its inhabitants with water and electric energy, or either, and to acquire and take, by purchase, lease, condemnation or otherwise, and to hold, in the name of the city, any and all property situated within or without the city, and within or without the state, that may be necessary or convenient for such purpose.

The other participating California utilities have similar regulatory authority incorporated in their respective city charters.

Similarly, the Utah Code Annotated, Chapter 3--Duties of Public Utilities, Section 54-3-1, states in part:

> Every public utility shall furnish, provide and maintain such service, instrumentalities, equipment and facilities as will promote the safety, health, comfort and convenience of its patrons, employees and the public, and as will be in all respects adequate, efficient, just and reasonable. All rules and regulations made by a public utility affecting or pertaining to its charges or service to the public shall be just and be reasonable. The scope of definition "just and reasonable" may include, but shall not be limited to, the cost of providing service to each category of customer, economic impact of charges on each category of customer, and on the well-being of the State of Utah; methods of reducing wide periodic variations in demand of such products, commodities or services, and means of encouraging conservation of resources and energy."

At the present time, there is no authority granted to any of the utilities participating in IPP to independently, or collectively, require or implement conservation measures other than those mandated by existing laws. These kinds of activities are clearly, as they are designed to be, the responsibility of the various legislative bodies of city, county, State, and Federal governments and are not consistent with the legal authority of the individual utilities.

All changes to the rate structure require the approval, or are under the authority of agencies other than the electric utilities. Any rate restructuring considered by the Utah participants must be in conformance to the Utah Code Annotated, and must be individually approved by the appropriate regulatory agency, such as the Utah Public Service Commission. The Los Angeles Department of Water and Power, has already restructured its rates to include such concepts as short-run marginal pricing, time-of-use rates and cogeneration rates. The remaining California participants will be changing their rate structures in the near future also. The CEC's recently adopted Load Management Standards (Title 20, California Administrative Code) include a tariff standard that requires each utility to develop marginal cost rates when it prepares rate applications of filings for retail services and that the utility must submit such rates to its rate-approving body.

The major effects of rate restructuring are already accounted for in the participants' load forecasts. Such effects are inherent in the price of electricity assumptions used to determine the load forecast.

19. Carl Lyman

19.1 Comment: The statement is silent as to the persons affected by usurpation or acquisition of said property by IPP. The statement is also silent as to the adverse effect on approximately 14,000 acres of other grazing lands, which will be rendered either unsuitable or unusable for grazing because of roads, railroads, transmission lines and other incompatible uses being made of the area.

Response: Due to requirements of the Privacy Act (P.L. 93-579, 1974) information which could lead to the identification of affected persons by name cannot be included in the environmental statement. However, impacts to residents as a group have been identified.

A standard condition on Federal rights-of-way is that the applicant (in this case IPP) consents to occupancy and use of the right-of-way by the United States Government and its permittees on all or part of the right-of-way except those actually occupied or required by the project. About 8,120 acres (Table 1-3) would be occupied or fenced in by the Salt Wash proposal and 5,125 acres (Table 8.1-3) by the Lynndyl alternative and would therefore be lost to other uses including grazing.

In general, the land requirements of the roads, railroads, and transmission lines are spread over a long linear distance and would not significantly reduce the grazing capacity of any single livestock operations or change livestock operations. However, the sale of the 4,640-acre plant site and the acreage occupied by the railroad spur (49 acres) of the Lynndyl alternative would reduce the grazing capacity of one allotment by about 7 percent. A discussion of this impact has been added to Additional Information Section of the FES Lynndyl Site and Railroad on the Sugarville Allotment.

20. James Catlin, Sierra Club

20.1 Comment: I question the technique used in generating visibility data. The assumptions are that the best or the worst case visibility estimates can be made using sensors placed at equal levels, at distant sites, about the stack height of the plant. I believe that this does not accurately describe the visibility changes that occur due to power plants in Southern Utah.

Response: Calculations to estimate the visibility impacts were made using what was considered "worst-case" conditions. Since the state of the art in visibility modeling is not well defined, and since no guidance or regulations have been received from EPA, the technique used is considered within the limits of the state of the art.

20.2 Comment: The reservation the Utah Chapter holds deals with the need for the project. We do believe that Utah does need electricity; the question is how much; the question is where should it be produced and when should the plants be put in operation. I don't think that the utility adequately answers these questions.

Response: Comment noted; revised Page (Vol. 1, Page 1-6) containing changes (underlined) included in Addendum.

20.3 Comment: Some of the additional problems of Lynndyl that I believe have not been carefully looked at are the nitrous oxide problems. In the EIS, it mentioned that there is no specific type of control yet defined, yet when it comes to estimates as to whether it will meet the air quality emissions or not, there are estimates; so it seems to me that they have made assumptions on some kind of equipment. Particularly in this pollutant, when you reach a facility this size, the technology for controlling this is not as well understood as for other pollutants. I believe it needs to receive more attention.

Response: As indicated in Vol. 1, Page 1-31, NOx control would be by combustion techniques through boiler design and operation. This is the accepted method of NOx control and the proponents of the project are committed to meet applicable State and Federal standards for NOx emissions (0.5 to 0.6 lbs/million Btu depending upon coal quality). No assumption on equipment or operation was made. The emission figure for NOx represents the maximum allowable emission rate.

20.4 Comment: I believe that the BLM--if the plant at Lynndyl--or at Salt Wash is built-should put stipulations which would sharply control off road vehicle use of different aspects of the plant.

Response: See Transcript 17 Response 1.

20.5 Comment: It was mentioned before that there was inadequate discussion of alternatives. I won't talk at length about them, but I will mention that the scope of the meeting for the Allen Warner Valley energy system, an environment defense fund put together an exhaustive study of the ability to meet the utility's own energy demands with what they call the soft alternative, the soft path alternative. I believe this should be seriously considered.

Response: See Transcript 18.2 which discusses conservation. In order for a combination of alternatives to be a feasible source of energy, it must meet the following criteria:

a. The combination must provide base load capacity and energy.
b. The combination should reduce dependence on foreign oil and natural gas fuels.
c. The technology for any new energy sources in the combination must be available for commercial use in the time period for IPP.

In order for the additional capacity from the combination of alternatives to be available, however, the individual problems associated with each of the alternatives would have to be solved, and the total capacity of the combination of alternatives would have to be made available to the participants. In addition, the prospective use of these alternative resources must be considered along with the total Southwestern area energy demands. Not only are the participants investigating new resources, but the other electrical utilities of California and the Southwest are also considering new resources such as those discussed above. Therefore, these resources cannot be considered as wholly available to the participants.

Even if these alternative resources were available, there would still be an added adverse environmental impact from the additional sites. Instead of one centrally located facility, the alternate sites would be located in northern California (geothermal), the California desert (solar-thermal) and one of the Southwestern states which has an abundance of coal (coal-fired). This multiplicity of sites would require that more miles of power transmission line and transmission line rights-of-way would have to be added for transmission of electrical power. In addition to the land required for transmission lines, more acreage would be required for the sites. This is particularly true of solar and geothermal facilities. Each of these alternative generating facilities would also require a source of water.

A combination of alternatives could be an alternative to the IPP, but is not considered feasible due to the reasons discussed above.

Written Comments

Forty-four written comments were received, three of which did not address issues in the DES. Following is the list of letters to which responses were made:

Letter Index No.	Letter Received From
1.	Advisory Council on Historic Preservation
2.	Mr. Rodney Greeno
3.	U.S. Department of Energy
4.	U.S. Department of Transportation
5.	National Park Service
6.	Mr. Andy P. Bartson
7.	Bureau of Mines
8.	Mrs. Carol Nielson
9.	Regional Solicitor, U.S. Dept. of the Interior
10.	Utah Division of State Lands/Forestry and Fire Control
11.	U.S. Geological Survey
12.	U.S. Heritage Conservation and Recreation Service
13.	Sevier River Commission
14.	California Air Resources Board
15.	Mrs. Nella Jackson
16.	Mr. Curtis Warrick
17.	Mr. Peter Hovingh
18.	California Association of 4WD Clubs
19.	Friends of the Earth
20.	Forest Service
21.	Nevada Power Company, Las Vegas
22.	Elaine G. Taylor
23.	U.S. Dept. of Transportation, FAA, Rocky Mountain Region
24.	Dorothy K. Gardiner
25.	Wendell Shurtliff
26.	Sierra, Club, Utah Chapter
27.	Walter Klinger
28.	Soil Conservation Service
29.	David E. Creighton
30.	Scott Matheson, Governor of Utah
31.	Arizona Game and Fish Department
32.	U.S. Environmental Protection Agency, Region VIII

Letter Index No.	Letter Received From
33.	State of Nevada, Governor's Office of Planning Coordinator
34.	Arizona Office of Economic Planning and Development
35.	McDougal, Haley, and Dahl; Attorneys at Law
36.	State of California
37.	Millard County
38.	The Wildlife Society, Utah Chapter
39.	Fish and Wildlife Service
40.	Bureau of Reclamation
41.	Forest Service

Comment Letters and Responses--on following pages

Advisory Council On Historic Preservation

1

1522 K Street N.W.
Washington D.C.
20005

July 18, 1979

Mr. Paul Howard
State Director
Bureau of Land Management
University Club Building
136 East South Temple
Salt Lake City, Utah 84111

Dear Mr. Howard:

This is to acknowledge receipt of the draft environmental statement for the proposed Intermountain Power Project, Wayne County, Utah on July 16, 1979. We regret that we will be unable to review and connent on this document in a timely manner pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

Nevertheless, the Bureau of Land Management is reminded that, if the proposed undertaking will affect properties included in or eligible for inclusion in the National Register of Historic Places, it is required by Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320) to afford the Council an opportunity to comment on the undertaking prior to the approval of the expenditure of any Federal funds or prior to the issuance of any license. The Council's regulations, "Protection of Historic and Cultural Properties" (36 CFR Part 800.4) detail the steps an agency is to follow in requesting Council comment.

Generally, the Council considers environmental evaluations to be adequate when they contain evidence of compliance with Section 106 of the National Historic Preservation Act, as amended. The environmental documentation must demonstrate that either of the following conditions exists:

1

1. No properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will not affect any such property. In making this determination, the Council requires:

--evidence that the agency has consulted the latest edition of the National Register (Federal Register, February 6, 1979, and its monthly supplements);

--evidence of an effort to ensure the identification of properties eligible for inclusion in the National Register, including evidence of contact with the State Historic Preservation Officer, whose comments should be included in the final environmental statement.

1

2. Properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will or will not affect any such property. In cases where there will be an effect, the final environmental statement should contain evidence of compliance with Section 106 of the National Historic Preservation Act through the Council's regulations, "Protection of Historic and Cultural Properties".

Should you have any questions, please call Jane King at (303) 234-4946, an FTS number.

Sincerely,

for Louis S. Wall
Chief, Western Division
of Project Review

9-47

1.1 Response: Memoranda of Understanding between BLM and Utah, Nevada, Arizona, and California assure compliance with the National Historic Preservation Act of 1966 as amended and the Council's regulations. The Memoranda of Understanding from Utah, Nevada, and Arizona, along with the approval from the State Historic Preservation Officers, are included in the DES in Vol. 3, pages 47-52. The Memorandum of Understanding from California and the approval of the State Historic Preservation Officer are herewith included.

CULTURAL RESOURCES
MEMORANDUM OF UNDERSTANDING
INTERMOUNTAIN POWER PROJECT ENVIRONMENTAL STATEMENT

BETWEEN

THE BUREAU OF LAND MANAGEMENT
AND
THE STATE OF CALIFORNIA

I. PURPOSE

The Bureau of Land Management, hereafter referred to as the Bureau, is preparing the Intermountain Power Project Environmental Statement (IPP ES) under the provisions of the National Environmental Policy Act of 1969. The Bureau has determined that cultural values could be damaged or lost as a result of actions proposed in the IPP ES. The following kinds of actions are proposed on public lands administered by the Bureau:

a. Non-Bureau Energy Initiative (NBEI) proposals submitted to the Bureau. These include proposals for rights-of-ways and other land uses involving the surface of public lands.

b. Major transportation network proposals in connections with power plant operation.

The California State Historic Preservation Officer, hereinafter referred to as the State, is interested in assuring that cultural values in California be protected. The Bureau and the State have consulted and agree as to the measures, outlined in this agreement, which should be undertaken to protect these values should authorization be granted to use public lands in California administered by the Bureau for the purpose of any of the above mentioned proposed actions. In this agreement, "cultural resources" mean data and sites which have archeological, historical, architectural, or cultural importance and interest.

Investigators will be qualified (per 36 CFR 66) to evaluate these "cultural resources." Qualifications of investigators will be submitted to the State.

II. AUTHORITY

This agreement is authorized under the Federal Land Policy and Management Act of 1976 and the National Historic Preservation Act of 1966. It is in accord with Bureau policies and programs. It does not abrogate nor amend any other agreement between the Bureau and the State.

III. RESPONSIBILITIES AND PROCEDURES

The Bureau will comply with 36 CFR 800 in identifying sites which are listed in or eligible for inclusion in the National Register of Historic Places and determining potential effects and appropriate impact mitigation measures.

A. As part of the planning and environmental analysis required prior to any decision to authorize rights-of-way for the proposed IPP, the Bureau will consult with the State and will search for archeological, historical and ethnographic literature concerning the IPP area. Consultation with local Native American groups to identify areas of cultural significance will be completed (per P.L. 95-341). Class II studies (designed sampling inventories) have been conducted on all public lands that would be affected by the IPP proposal and alternatives. Reports and resource management plans generated at this stage will be reviewed by the State.

B. Wherever it is determined to be not possible and feasible to avoid sites that contain cultural values, the Bureau will consult with the State and the local Native American community to determine the most satisfactory means of mitigating damage, as required by (36 CFR 800). The Native American Heritage Commission shall be consulted to determine the most satisfactory means of mitigating damage, when local Native Americans are not available. Cultural materials will be curated in accordance with current curation standards (per 1906 Antiquity Act) and in accordance with the desires of the local Native Americans for prehistoric materials. Human remains and objects determined to be sacred to the local Native Americans shall be treated in accordance with their desires.

C. After completing the planning and environmental analysis process, should the proposed management be implemented, the Bureau will inform project participants of, monitor compliance with, and enforce the following stipulations:

1. Prior to initiation of ground-disturbing activities, literature searches and intensive surveys will be undertaken on all areas which would be disturbed. The potential affects of the undertaking on National Register eligible properties will be evaluated (per 36 CFR Part 800).

2. Whevever possible and feasible, cultural resources will be avoided by construction and related activities. This will be accomplished mainly by rerouting linear facilities such as transmission lines, roads, fences and pipelines, and adjusting locations of other facilities.

3. A professional archaeologist and a Native American representative (from the appropriate group) will be required to be present when ground fisturbing operations are underway in culturally significant areas, i.e., burial places and cemeteries, places of spiritual or social importance, sacred hot springs, obsidian outcrops, ceremonial sites, and shrines.

4. Subsurface cultural resources that are encountered during any construction will be preserved through data recovery if there is no other recourse in such a situation.

D. The Bureau will provide cultural resources reports, technical reports, and other pertinent materials to the State, local Native Americans and the California Native American Heritage Commission.

E. The State will provide the Bureau with a letter, for use as an exhibit in the IPP ES, to the effect that the procedures herein proposed by the Bureau, if correctly implemented, will satisfy the State's interest.

IV. The attached list identifies the specific actions that the Bureau anticipates will be included in the IPPES. The list may be brought up to date, as necessary, without amending this agreement in any way.

V. IMPLEMENTATION

A. This agreement will become effective on the date of the last signature on this agreement.

B. Either party may request revision or cancellation of this agreement by written notice, not less than 30 days prior to the time when such action is proposed.

Date: [illegible]

California State Director
Bureau of Land Management
Department of Interior

9/12/79
Dates

California State Historic
Preservation Officer

STATE OF CALIFORNIA—THE RESOURCES AGENCY EDMUND G. BROWN JR., Governor

OFFICE OF HISTORIC PRESERVATION
DEPARTMENT OF PARKS AND RECREATION
POST OFFICE BOX 2390
SACRAMENTO, CALIFORNIA 95811

September 18, 1979

Mr. Craig Harmon
Richfield District Office
Bureau of Land Management
P.O. Box 768
Richfield, Utah 84701

RE: Intermountain Power Project Memorandum of Understanding

Dear Mr. Harmon:

My staff has reviewed the referenced Memorandum of Understanding for Cultural Resources between the BLM and the State of California (SHPO).

I feel that through cooperative application of the conditions in this Agreement, the cultural resources within the IPPs area of potential environmental impact can be adequately preserved.

If you have any questions or concerns, please feel free to contact Jeffery Bingham, Staff Archeologist, at (916) 322-8701.

Sincerely,

Dr. Knox Mellon
State Historic Preservation Officer
Office of Historic Preservation

R. R. 1
Glen Douglas, Mts. 59404
July 24, 1979

Richfield District Office
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

Donald L. Sendleton, District Manager:

These comments concern the Intermountain Power Project EIS.

1 There should have been a comparison in the EIS of the cost of power produced at the Salt Wash Site relative to the cost of power produced at the Kyrene Site.

2 Fluidized-bed combustion should have been mentioned in the alternatives section. I believe that this relatively new technology controls both SO_x and NO_x emissions and is being used commercially.

3 Serious conservation could make IPP unnecessary, but is very unlikely. I realize that pleas for conservation fall on deaf ears, for the most part, in this narcissistic age and that future electricity shortages could be more environmentally harmful than all of the IPP's in the world. If confronted by energy shortages, the American people will forfeit even greater power to the energy companies with disastrous consequences for the environment.

Therefore, I must petition that IPP be built, but not at the Salt Wash Site. The parklands of the Colorado Plateau should be protected from the discoloration of the atmosphere caused by NO_x emissions. In the EIS it is stated that: "It is the present policy of the BLM to protect the scenic values of their Class I areas from any visual impairment at human levels of perception"--an excellent policy. I've never been able to understand why anyone would consider siting a 3,000-mw powerplant 11 miles from a national park.

Any nation which allows its average annual electrical energy growth rate to reach 6% almost deserves the pollution created by its powerplants.

Sincerely,

Rodney Greene

2.1 Response: Cost comparison of power produced was not discussed in the OES because it is not an environmental factor. Whether costs are higher at one plant or the other is not an environmental consideration. Rather, it becomes an economic consideration which will be considered in the ultimate decision.

2.2 Response: Fluidized bed combustion holds considerable promise of substituting for conventional or cyclone firing for small and medium-sized boilers. This promise does not, however, accrue to a very large plant, such as IPP. A major advantage of fluidized bed is removal of SO_x from high-sulfur coal; the coal used at IPP would be a low-sulfur coal. It is possible that NOx emissions also would be reduced due to lower combustion temperatures. However, in view of the relative newness of commercial-scale fluidized bed boilers, the use of fluidized-bed boilers appears to be unavailable as an alternative design feature for IPP

2.3 Response: Energy conservation is discussed in detail in Hearing Transcript 18 Response 2.

Department Of Energy

Western Area Power Administration
P.O. Box 11606
Salt Lake City, Utah 84147

AUG 6 1979

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Mr. Oonald L. Pendleton
District Manager
Richfield Oistrict Office
Bureau of Land Management
150 East 900 North Street
Richfield, Utah 84701

Oear Mr. Pendleton:

This office has reviewed the Oraft Environmental Statement for the Intermountain Power Project, Volumes I, II, and III, (hand-delivered to this office on August 2 by Utah State Office personnel), with particular attention to the proposed power transmission systems.

We believe the draft statement is well prepared and complete in detail. The proposed Salt Wash and alternative Lynndyl power transmission system features are sufficiently described to facilitate determinations of their environmental impact in relationship to the various project alternatives.

This office supports the proposed Intermountain Power Project and your draft statement. However, we take no position relative to the choice of plant sites or transmission locations; our function can be correlated with either of the two systems. We are ready and willing to provide such positive assistance as you may find necessary or desirable during the finalization of the draft statement.

Sincerely yours,

A. M. Gabiola
Area Manager

cc: Administrator, Western, Golden, Colorado, Attn: A2000 & A6000
Oistrict Manager, Western, Montrose, Colorado
State Oirector, Bureau of Land Management, 136 East South Temple, Salt Lake City, Utah 84111

3.1 Response: Comment noted.

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
BIDDN RDAD

UTAH DIVISION
P.O. Box 11563
Salt Lake City, Utah 84147

August 10, 1979

IN REPLY REFER TO:
HDR-UT

District Manager
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

Gentlemen:

Please refer to Mr. James L. Mulloy's letter of July 12, 1979, requesting comments on the draft environmental statement for the Intermountain Power Project.

Our main concern with respect to this project is the effect that the trucks, hauling the coal to the railroad,will have on the existing or proposed highway systems. While reference is made to the use of these systems to transport workers, we believe a more thorough effort should be made to properly identify those new routes that need to be constructed and those existing routes which would require upgrading or reconstruction. In addition, construction of bypass routes around small communities or towns should be considered for safety and the reduction of air and noise pollution. 1 2

We appreciate the opportunity of being invited to comment on the draft environmental statement for this project.

Sincerely yours,

George W. Bohn
Division Administrator

4.1 Response: According to project proponents, firm contracts for the coal supply cannot be signed until an environmental impact report is prepared as required by the California Environmental Quality Act and the proposed action is endorsed by state officials in California. Also, contracts cannot be signed for coal supply until financial arrangements are developed which could include future bonding actions. Coal would most likely be obtained from existing mines or leases in the Central Utah coal fields of Sevier, Emery, and Carbon counties and transported over existing roads.

Because individual mines have not been identified for IPP at this time, it is not possible to identify specific transportation routes required for hauling coal to railroad loading facilities. Further environmental assessment would be required if new transportation routes across public lands are required.

The Final Environmental Statement, Development of Coal Resources in Central Utah, Chapter IV, pages 49 through 52 provides some insight into anticipated traffic resulting from increased production of coal in Central Utah.

4.2 Response: The need for bypass routes cannot be established until transportation routes are determined. See Letter 4 Response 1 for additional discussion.

United States Department of the Interior

NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO

L7621 (RMR)PC

AUG 9 1979

5

Memorandum

To: District Manager, Richfield District Office, Bureau of Land Management, Richfield, Utah

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Intermountain Power Project Environmental Statement (ER 79-39)

We have reviewed the subject draft environmental statement and reiterate our earlier position that if a power plant is built for this project, the Lynndyl site would be preferable from the standpoint of protecting the air quality and visibility in Capitol Reef and Canyonlands National Parks. Enclosed is a copy of our letter of April 19, 1979, to Mr. James Anthony expressing this position.

1 Additionally, we call attention to section 101(b) of Public Law 95-250 (92 Stat. 166) wherein the Secretary is directed not to exercise his authority in derogation of the values and purposes for which areas of the National Park System have been established. We believe that authorizing construction of the Salt Wash site would result in such derogation of air quality values in these parks.

Richard A. Strait

Enclosure

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

5.1 Response: Violation of the Prevention of Significant Deterioration Class I increments are identified in Vol. 1, Page 3-5 and Tables 3-4 and 3-5. The Secretary of the Interior will take these air quality impacts into consideration when making recommendations concerning IPP.

6-32

6

Dear Donald F. Pendleton,

I am completely opposed to the air pollution caused by coal-fired plants. Please require the most up-to-date "scrubber" technology on any plant you approve. I am opposed to the power plant itself and the coal mining that goes with it and I don't want anything to do with it. However if I don't expect that many people will choose to have the strength or passion to stop the energy monster and live without the material comforts that we have come to expect.

1

Thank you

Andy P. Bartson

ANDY P. BARTSON
P.O. BOX 886
MISSOULA MT
59807

6.1 Response: Air quality impacts have been identified for the Salt Wash site (Vol. I, Page 3-1 through Page 3-14) and the Lynndyl site (Vol. 2, Page 8.3-1 through 8.3-11). The Salt Wash analysis shows the Prevention of Significant Deterioration increments would be exceeded. Further control of air pollutants would be necessary to meet applicable State of Utah and Federal standards and regulations. The air quality study of the Lynndyl site shows that all applicable State of Utah and Federal air quality standards and regulations would be met. EPA considers compliance with air quality standards and regulations (specifically the New Source Performance Standards) to be acceptable use of Best Available Control Technology (BACT). Further control of air pollutants at the Lyndyl site is a policy decision that must be made by the Secretary of the Interior.

OFFICE OF THE DIRECTOR

United States Department of the Interior

BUREAU OF MINES
2401 E STREET, NW.
WASHINGTON, D.C. 20241

7

August 9, 1979

Memorandum

To: District Manager, Richfield District, Bureau of Land Management, Richfield, Utah

From: Director, Bureau of Mines

Subject: Draft environmental statement (DES) for Intermountain Power Project (IPP), Bureau of Land Management, Wayne and Millard Counties, Utah

The Bureau of Mines has reviewed the subject draft environmental statement for possible conflict between the Intermountain Power Project and mineral resources.

Known mineral resources near the Lynndyl plantsite are limited to sand and gravel. The document recognizes that mineral resources occur along the transmission corridors (Vol. II, p. 8.2-13), noting that powerline segments cross the Harmony coalfield in southwestern Utah and a potential geothermal resource area. However, land use conflicts between mineral extraction and the transmission lines are deemed minimal.

There appears to be no appreciable conflict with mineral resources, and the Bureau of Mines has no objection to the proposed project that may indirectly benefit the private mineral-related sector.

Acting Assistant Director

7.1 Response: No response required.

Statement by Carol M. Nielson, Aug. 15, 1979, at EIS hearing in Delta, Utah 8

In the Draft Environmental Statement on Page 8.3-41, under the paragraph heading "Infrastructures", I quote:

"At this writing no firm commitments have been made to provide the infrastructural needs identified under the following components. However, state and local governments are presently working with the applicant to provide these facilities as needed. Should these plans fail to develop or if through a lack of front-end money some or all of the additional facilities are not available at the population peak, the various services would be expected to decline in quality and quantity. As plans are carried out, population levels stabilize and additional tax revenues become available, the needed facilities could be brought up to appropriate standards."

These facilities would include water, sewer, solid waste, schools, police, fire, public health, roads.

This is potentially the most serious impact that could occur on the residents in the communities of Millard County, yet only rates one short paragraph in the Draft Environmental Impact Statement. In the Socio-Economic Analysis dated January 31, 1979, prepared for IPP by Architects Planners Alliance, on page 152 it states "it has not yet legally been determined if the assessed valuation of the IPP plant will or will not be added to Millard County for bonding purposes, although the plant will definitely generate tax-like revenue." 1

The Draft Environmental Impact Statement does not address itself to the scenario of the county not having advance or in lieu of ad valoren taxes or bonding capabilities against the plant's assessed valuation. 2

If, in fact, it is determined that the IPP plant cannot or will not pay advance in lieu of ad valoren taxes to alleviate the impact, Millard County residents will suffer greatly through increased taxing of property owners, and downgrading or total lack of services such as solid waste removal, public health services, water and sewer hook-ups, undermanned police departments, inadequate fire departments, poor roads and overcrowded and understaffed schools. We will be paralyzed for lack of funds, and the impact will be totally negative on the entire area. 2

Pertaining to education, in the Environmental Impact Statement, Page 8.3-46 I quote "IPP would add to an overcrowded classroom problem that will already exist by 1982. The schools present capacity would be exceeded by 1,255 students and 5 teachers in 1987 and 702 of these students (56 percent) would be attributable to IPP". These figures are K-7 only, add to this from Table 8.3-20 grades 8-12, where the school's capacity will be exceeded by 304 students, in the Delta-Lynndyl area the schools would be overcrowded by a total of 1,559 students. If the Millard School District cannot bond against the assessed valuation of the plant, it will face a difficult if not impossible task of raising funds to build classrooms for the projected population. According to best estimates, it would take 10 or 12 million dollars total to prepare for that many students which would include building classrooms, obtaining buses, personnel, etc. 3

The bottom line question facing the citizens of the County, IPP, and the BLM, is "Where will the money come from to alleviate the early impacts on the county before tax moneys become available to the county and the school district."

An immediate solution to the problem of front-end money to mitigate impacts and a favorable legal determination as to using assessed valuation of the IPP plant to bond against is imperative, and if it is not obtained immediately I would hope approval of the Environmental Impact Statement concerning the Intermountain Power Project would be delayed until the Utah State Legislature, IPP, and/or ICPA participants in the Intermountain Power Project can find a solution to these problems, which, if they were encountered by IPP might be termed to be "fatal flaws".

8.1 Response: Comment noted; see Transcript 14 Response 1.

8.2 Response: Your concerns are discussed in Transcript 14 Response 2.

8.3 Response The problem referred to in the comment appears to go beyond the "front-end" type revenues to include the availability of funds needed for community services, which include schools.

IPP has sent a letter to the BLM defining its policies relative to the financing of local infrastructural needs (herewith included). In that letter, IPP has stated its commitment to provide funds for the operation and maintenance of community services, and to assist the local communities in obtaining government assistance to minimize socioeconomic impacts.

The State of Utah Department of Community and Economic Development has also sent a letter (herewith included) to the BLM which describes some possible means of solving revenue problems and, also, at least some of the legal obstacles.

Therefore, it appears that until legal means are provided to obtain and distribute the required revenues, this very important issue will remain unresolved.

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IPP
0342

IPP

INTERMOUNTAIN POWER PROJECT

September 7, 1979

Mr. Gerald E. Magnuson
Acting State Director
Bureau of Land Management
Utah State Office
136 E. South Temple
Salt Lake City, Utah 84111

Dear Mr. Magnuson:

This is in response to your letter to me, dated August 22, 1979, requesting that IPP define our current policy toward "front-end" money for infrastructural needs due to the Project, and the status of any ongoing events related to socioeconomic concerns. Since the availability of sufficient infrastructure is important to support adequate housing for IPP's construction and operation personnel, IPP is equally concerned with this problem. As such, IPP has committed its complete cooperation and assistance with state and local officials to better define all potential alternatives and assist in the selection of adequate solutions to the IPP tax issue and "front-end" financing of infrastructural needs.

The IPP policies toward financing of local infrastructural needs are as follows:

1. IPP is committed to the intent of Utah Code Annotated, Section 11-13-25, which requires IPP to make annual payments to the local entities for the purpose of providing funds for the operation and maintainance of community services.

2. It is still the intention of IPP to pay sales and use taxes, with the expectation that such funds would be used to finance infrastructural needs.

3. IPP is willing to provide financial aid, in advance, for the construction of the infrastructural needs due to the Project in exchange for a credit to its sales and use tax obligation or its payment of in lieu ad valorum taxes.

4. For those services that cannot be provided by the above methods, IPP will assist the local communities in identifying and obtaining existing or new federal or state financial assistance programs to minimize the socioeconomic impacts.

With respect to IPP's ongoing involvement in socioeconomic planning, we are:

1. Cooperating and working with the Governor of Utah to better define the IPP tax-related problem and develop an acceptable source of funding for infrastructural needs. As part of this effort, IPP participated at the August 14, 1979 meeting with the Governor and leading legislative representatives which the governor called to discuss IPP issues. In addition, IPP has pledged its support to work with the Governor's Tax Revision Study Committee which has been assigned the responsibility to review the IPP issue and recommend specific solutions.

2. IPP has initiated a special, in-depth assessment of the socioeconomic impact of IPP on the communities within the Delta-Lynndyl area and Millard county. This study will identify specific existing infrastructural needs and additional needs which will be required as a result of IPP. This study will address the expenditures anticipated based on a range of a low, most probable and high population projection. This study is scheduled to be completed in September, 1979.

3. IPP is meeting with state and local officials to discuss the IPP tax issue and financing of infrastructural needs and to mutually develop and consider modifications to present Utah laws that may be required to assure a firm solution to the problems of financing local services. IPP has helped organize a special task force, comprised of Project, state and local officials, that is presently reviewing the IPP tax arrangement. The objective of this task force will be to recommend changes to the State of Utah that may be necessary for an effective mitigation program. It is the intention of IPP to consider any changes or modifications to the tax arrangements adopted under the Utah Interlocal Cooperation Act that would improve the capability of the Project and government to provide necessary infrastructural assistance.

4. IPP is working with local officials in an attempt to create a local Community Impact Mitigation Team for the purpose of identifying and prioritizing community impacts, and identifying alternative financial methods to provide the needed services.

5. IPP has employed full time a local public information specialist and a community development coordinator to work with local officials, planners, etc., in planning for IPP.

It is important to note that IPP cannot solve these problems by itself. Most solutions will require modifications to existing Utah laws and as such, require the adoption of these modifications by the State of Utah. IPP will continue to work with Utah legislators and the Governor to enact these modifications in an attempt to assure that local infrastructural needs will be met in a timely manner.

Sincerely,

James H. Anthony

JAMES H. ANTHONY
Project Engineer
Intermountain Power Project

CDH:db

cc: Mr. Lynn Leishman, BLM Richfield

IPP

INTERMOUNTAIN POWER PROJECT

[illegible]

October 3, 1979

Mr. Gerald E. Magnuson, Chief
Division of Planning and
Environmental Coordination
Bureau of Land Management
Utah State Office
136 East South Temple
Salt Lake City, UT 84111

Dear Mr. Magnuson:

This is to supplement our letter to you dated September 7, 1979, in which the Intermountain Power Project (IPP) defined its current policy toward "front-end" money for infrastructural needs due to the Project. As part of our ongoing involvement in socioeconomic planning, we stated that IPP is meeting with state and local officials to discuss the IPP tax issue and that a special task force was organized to recommend changes to the State of Utah to establish an effective mitigation program.

As part of this effort, the IPP Board of Directors agreed at their September Board meeting to recommend specific amendments for adoption by the State of Utah that should help alleviate the "front-end" financing problem. The Intermountain Power Agency (IPA) Board of Directors has also approved these amendments. The proposed amendments would provide the legal arrangement for IPP to provide, by contract, for payment of reasonable amounts necessary to help alleviate the direct impacts caused by IPP on facilities or services furnished by the county, municipalities, school districts, and other public entities.

This proposal, if adopted, would replace the present in lieu tax obligation during the construction phase and allow IPP to contract directly with the various entities in Millard County for necessary "front-end" money and for operational costs during that period. At the completion of construction, the in lieu ad valorem tax obligation would then be implemented. It is felt that this concept is within the general policies outlined in our above-mentioned letter.

We feel that this is a major step taken by the Project to provide impact alleviation and has been developed with the concerns of local and state officials in mind. Further work on this proposal will be conducted at an October 5, 1979 meeting of the special task force mentioned above and will be presented to the Governor's Tax Revision Study Committee on November 6, 1979.

As stated before, IPP will continue to work with Utah legislators and the Governor to enact the necessary modifications to assure that local infrastructural needs are met in a timely manner.

Sincerely,

Joseph C. Peckrell
President

CH:fl

cc: Lynn G. Leishman

SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT
231 EAST 400 SOUTH, SUITE 180
SALT LAKE CITY, UTAH 84111
(801) 533-5325

MEMORANDUM

TO: Bureau of Land Management
U.S. Department of the Interior

FROM: Community Development Division
Department of Community and Economic Development
State of Utah

RE: Mitigation of Impacts on Local Government and Problems Associated with Collecting Revenues from the Intermountain Power Project, Millard County

DATE: September 10, 1979

The primary, potential impacts and problems from the plant will be social, cultural, and environmental. The positive effects will include added employment opportunities, added public revenues, personal income benefits relating to the sale of irrigation water, and the general stimulus to the local economy. Anticipated negative impacts will include urban sprawl, septic tank contamination, and inadequate water supplies to service the additional population. Problems that are foreseen which can be mitigated with state intervention include:

(1) The county and its cities lack of pre-financing ability to supply the services required by a growing population.

(2) The county will receive the revenues from the power plant, but the county's cities will provide most of the public services.

(3) The influx of a new and heterogenous population will require social adjustments.

Pre-financing of Public Services

As soon as the IPP Plant is approved by BLM, financing front-end public facilities will be Millard County's primary problem. If Millard County can help its cities to provide adequate public facilities, then the County will be adequately prepared to deal with the social stresses resulting from rapid population influx.

To mitigate front-end financial problems associated with boom-town development, federal and state assistance should address three primary areas:

(1) a lack of city revenue during the development period; and (2) the inability of the governments of Millard County to finance necessary infrastructure and capital improvements.

The following are suggested solutions to community development front-end financial problems.

(1) Promoting the Establishment of a Federal/State Revolving Loan Fund. The creation of a federal revolving loan fund would provide capital for the planning and construction of major local government facilities and services, i.e., water, sewer, solid waste collection and disposal, and roads. The funds would be replenished out of local public bonds once facilities were constructed.

(2) Rectifying Local Tax Imbalances. Several options are available whereby Millard County could transfer portions of the county tax base from IPP into the cities:

Special Service District Act

This Act allows two jurisdictions to join together as one governmental entity to pool their resources in providing public services and facilities. In addition, this Act provides exceptions to the debt limitations on municipal bonds for cities and counties. The debt limitation is set by the Act at 12 percent of the reasonable fair cash value, or 40 percent of the assessed value within the jurisdiction. This is higher than the existing statutory provision which allows a debt limitation of 2 percent for counties and 4 percent for cities.

Interlocal Cooperation Act

This Act, passed in 1965, enables counties and cities to associate in providing necessary public services. The Act permits use of a broader tax base for provision of services.

Revenue Sharing

The Utah State Constitution should be amended to enable the State to share revenue with local governments and to allow counties to share revenues with municipalities.

(3) Having Industry Pre-pay Future Sales and Use Taxes. State statute permits the pre-payment of future sales and use taxes. A tax credit is given to the company at the time when the firm would normally pay the tax. The revenues received from pre-payment are earmarked for financing the construction of highways and schools within the impacted areas.

Although this approach makes front-end funds available on a timely basis, it has important shortcomings for Millard. Cities will not receive tax revenues from the plant and pre-paid sales tax cannot be used for water, sewer, or waste disposal systems which will be desperately needed if Millard County's cities grow rapidly from economic growth.

(4) Other Sources of Capital for Public Improvements.

(a) Cities Water Loan Fund (Division of Water Resources)

Interest free loans to incorporated municipalities, water improvement districts, and special service districts to help construct culinary water systems in areas of critical need throughout the state.

(b) Four Corners Regional Commission (Department of Community and Economic Development)

Supplemental and technical assistance (planning and study) grants to local governments in order to enhance the overall economy of the state and the Four Corners region.

(c) Farmers Home Administration

Financial assistance (grants and loans) for water and waste disposal facilities in communities with a population up to 10,000.

(d) Community Impact Account (Department of Community and Economic Development)

Assistance for communities impacted or potentially impacted by natural resource development where the need for public facilities and services is beyond the financial capability of local government.

(e) Environmental Protection Agency (Sewer Work Grants)

Funds to municipalities which have the most severe waste water disposal problems.

Collection of Revenues from IPP

These problem statements were obtained in conversation with Robert Cooper, Director of the Utah State Property Division, and Steven Allred of the Utah Legislative General Counsel's Office:

1. State law has no provision for collecting property taxes during the construction of a power plant. Impacts from the plant will affect Millard and adjoining counties approximately six years before ad valorem property taxes can be collected.

2. The Utah State Legislature passed enabling legislation permitting Millard County to levy an "in lieu, ad valorem" tax on IPP to take care of local impacts. A question has arisen of whether this tax is constitutional under the Commerce clause of the US Constitution and under Federal Statute 15 - U.S. Code - Section 391, which prohibits states or political subdivisions to impose a discriminatory tax on the interstate transmission of electricity. Of the electricity generated by IPP, 11 percent will go to Utah municipalities and is exempt. Thirty-two percent of the power will be sold to Utah

Power and Light and the Rural Electric Administration and will be taxable, and 52 percent will be sold to California municipalities. The 52 percent bought by California cities may or may not be taxable.

3. The physical assets of the Intermountain Power Project are owned by tax exempt entities in Utah. The condition casts doubt on whether local jurisdictions or the state can collect taxes on the plant itself.

4. Even if in lieu, ad valorem taxes are collected on IPP, revenues will accrue to Millard County but not to surrounding municipalities or Juab County where impacts will also occur.

These problems have been referred to the State Tax Revision Commission for study and development of solutions.

United States Department of the Interior 9

OFFICE OF THE SOLICITOR
SUITE 6001, FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

August 17, 1979

Memorandum

To: District Manager, BLM, Richfield District, Richfield, Utah

From: Regional Solicitor, Salt Lake City, Utah

Subject: Draft Environmental Impact Statement - Intermountain Power Project

We have reviewed the draft Environmental Impact Statement on the Intermountain Power Project. It is our opinion that the statement is of good quality and represents an effort by the Bureau of Land Management to comply with the requirements of the National Environmental Policy Act.

REID W. NIELSON
Regional Solicitor

By James A. Limb
JAMES A. LIMB
Attorney

9.1 Response: No response required.

DIVISION OF STATE LANDS
FORESTRY & FIRE CONTROL 10
146 North Main Street • Richfield, Utah 84701 • (801) 896-5761
William K. Dinehart-Director • Paul Sjoblom-State Forester

P.O. Box 652
Richfield, Utah 84701
August 17, 1979

Don Pendleton, District Manager
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

Dear Mr. Pendleton:

The draft of the Environmental Statement for the Intermountain Power Project cites the Division of State Lands as being the authorizing agency for rights-of-way necessary for pipelines, access roads, transmission lines, diversion dams and coal haul railroads.

The Division of State Lands/Forestry favors the development of the Intermountain Power Project and would provide the necessary rights-of-way upon application in accordance with the rules and regulations of the Division.

Sincerely,

Ed Storey

Ed Storey
Regional Manager

ES/sc

10.1 Response: No response required.

United States Department of the Interior

GEOLOGICAL SURVEY
RESTON, VA. 22092

OFFICE OF THE DIRECTOR

In Reply Refer To:
EGS-OES-79/39
Mail Stop 760

9 [illegible] 1979

Memorandum

To: District Manager, Bureau of Land Management
Richfield, Utah

From: Director, Geological Survey

Subject: Review of draft environmental statement for Intermountain Power Project, Utah

We have reviewed the draft statement as requested in a memorandum of July 18 from the Assistant Secretary--Energy and Minerals.

General Comments

Environmental impacts related to geologic conditions have been comprehensively analyzed in the draft statement, which is characterized by outstanding maps and evaluation of alternatives. An innovative feature is the evaluation of impacts along all construction corridors by means of "environmental profiles" (fig. 2-A to 2-M, 8.2-A to 8.2-E, etc.).

1. Ownership of the more than 8 million tons of coal to be used annually should be described, and surface ownership of the lands involved in the proposal should be fully addressed.

2. Apparently a portion of the final approval of the project is dependent upon the State of California's Environmental Act. According to the text, this act can influence project actions regardless of the ownership of the land. In what way does this State act override Federal jurisdiction on federally controlled lands?

Specific Comments

3. Page 1-8, Water. The expression "culinary water" used here and generally in all volumes is incorrect usage for "water for public supply" or "municipal water supply."

ONE HUNDRED YEARS OF EARTH SCIENCE IN THE PUBLIC SERVICE

4. Page 1-61. It is not clear whether any monitoring to protect ground water is planned, other than the monitoring of the quality of ground water for plant use. Is any monitoring planned for ash-disposal or coal-storage facilities?

5. Page 2-23, Oischarge. The text implies here and states on page 3-16 that 24 springs are fed by ground water from the Navajo Sandstone. This cannot be true because many of the springs are hundreds of feet above the artesian water level of the Navajo aquifer. "Area of water impact" should be identified.

6. Page 2-32. The area of the Navajo Sandstone that would be dewatered must be included for the volume calculations to be meaningful. The area could be shown on figure 2-12.

7. Page 3-16, Ground Water. It is stated that during the operating lifetime of the Salt Wash plant 250 acre-feet of water per year would be supplied to meet terrestrial ecological needs at Caine Spring, which is expected to cease flowing. It is estimated that 50 years would be required for the Navajo Sandstone aquifer to return to present equilibrium conditions (p. 3-19). Has mitigation of effects at Caine Spring and other affected springs during the recovery period been considered. What mitigation is proposed for wells that are affected (p. 140, 141)?

8. Figure 3-1. The statement would be strengthened by including more specific information on the ground-water/surface-water interrelationship within the project area. Such information would be helpful in assessing effects of computed decline in water levels, especially on base flow of Muddy Creek.

9. Page 6-3, first par. following sec. 2. Subsidence and water flow are quantified in the Central Utah environmental statement (vol. I, ch. IV, p. 1 and 6, etc.).

10. Page 8.1-15, 16, 17, Water. Public supply water should be mentioned to show the difference between a demand of 50,000 acre-feet per year at Salt Wash and 39,200 acre-feet per year at Lynndyl. What will the towns do for water (see p. 8.2-65)?

11. Page 8.3-11, Project Area. It is stated that there would be "600 acres (1.2 million cu. ft.) of aggregate borrow sites." Apparently the "600 acres" should be changed to "200 acres" and the "cu. ft." should be changed to "cu yds." (See p. 8.5-2 and 3.)

12. Page 8.3-12, Water Resources. The figures on water requirements and supply require clarification in view of the discussion on pages 8.1-15, 16, 17.

13. Page 8.3-13, Water Use Changes. Is it known that no source conflict will occur in regard to additional water use of 45,600 acre-feet annually? "Water rights" (p. 8.3-41, Water Supply) are not the same as available water.

14. Page 8.5-2, Ground Water. Pumping at the plant location probably will cause land subsidence because the aquifer is artesian (fig. 8.2-4). The area and depth of the cone of depression should be quantified.

F. B. Meisler
for H. William Menard

11.1 Response: On August 24, 1979 contact with a representative of IPP reaffirms the statement included in OES Volume I, Page 1-8 which states that ". . . firm contracts for a coal supply will not be signed until the requirements of the California Environmental Quality Act are met. Coal would most likely be obtained, however, from the Central Utah Coal fields."

The probable locations of coal sources are shown in Figure 8.1-6, Volume II OES (IPP). Information concerning land ownership in the Central Utah coal fields is provided in the Final Environmental Statement Development of Coal Resources in Central Utah, 1979 as prepared by the U.S. Geological Survey--refer to Page II-53 and Table 2-18, also Figure II-19 of that Regional Coal ES.

11.2 Response: It is assumed that the comment refers to Vol. 1, Chapter 4, Page 4-1, which states: "The California Environmental Quality Act requires the IPP proponents to implement the following measures on all lands regardless of ownership."

The power project cannot be approved for the California participants until the requirments of the California Environmental Quality Act (CEQA) are met.

Recent consultation with representative of IPP assures that in no way does the CEQA override jurisdiction on federally controlled lands; nor does the BLM believe that California Law would have jurisdiction over federal lands.

11.3 Response: Comment noted; revised pages containing changes (underlined) included in the Addendum.

11.4 Response: Observation wells would be constructed within the plant site and monitored for water pollution during the life of the project. The ash disposal and coal-storage sites are within the plant site (Figure 1-7). The text on Page 1-62 has been revised to indicate observation wells would be used to monitor ground water quality in the area. Revised page containing this change (underlined) included in Addendum.

11.5 Response: Comparative analysis of the artesian water level and spring surface level of the 24 springs in the area of potential impact to ground water indicate that Caine Spring, Coral Canyon Seep, Seismo Seeps, and an unnamed seep are probably fed by the Navajo Sandstone. This does not eliminate the possibility of other springs discharging from that same source. The text has been changed to reflect this analysis. Following is a list of the revised pages containing changes (underlined) and/or showing deletions (arrows) which are included in Addendum.

Vol. 1, Pages 2-33, 3-16, 3-19, 3-23, 5-4, 5-5, 6-3, 6-6, 7-2.
Vol. 3, Pages 4, 6.

11.6 Response: This section was meant to show that there is a large volume of water in the Navajo Sandstone. It has no relation to the proposed project impact area.

11.7 Response: Chapter 4, Part C, Section 2, states: "The applicant would be required to replace all water lost from springs, wells, seeps, creeks, and streams which has been appropriated to federal agencies or other users. Authority is granted to the State of Utah under the UCA 1953, 65-2-1."

The proponents of the project have proposed to provide water at depleted springs by windmills when the project is terminated. The effectiveness and reliability of windmills in Wayne County has not been proven and it may be necessary to require pumps with independent energy sources to ensure that flows are maintained.

11.8 Response: There is an important interrelationship between ground water and surface water sources in the project area. Figure 3-1 attempted to show this. There are other specific data available in the preliminary engineering and feasibility studies for IPP and technical studies and reports by the U.S. Geological Survey (Giusti, 1977) on surface water/ground water relationships. These studies and reports indicate that the overall ground water drawdown magnitude is minor relative to the total surface flows.

Seepage from the Navajo Sandstone aquifer contributes to surface water at Caine Springs, a tributary to Muddy Creek, and to a minor extent along Muddy Creek and the Dirty Devil River. With the exception of the Caine Springs, the Navajo Sandstone aquifer does not contribute significantly to the base flows of these streams.

Caine Springs produces 2.8 cfs to Salt Wash base flow. This provides a significant portion of the Muddy Creek's low flow below its confluence with Salt Wash.

11.9 Response: A deletion has been made to the first paragraph in Vol. 1, Page 6-3. Revised page showing deletion (arrow) included in Addendum.

11.10 Response: Public supply water is not the sole factor for the apparent differences between the two locations. To clarify this point, a new figure has been prepared which is comparable to Vol. 1 Figure 1-15. The new figure is identified as Figure 8.1-7a, Page 8.1-21a in the Addendum.

It is anticipated that the various towns which may be impacted by the project would increase their public water supply as needed from existing sources. For analysis purposes, this was estimated at 900 acre feet increase in the entire Lower Sevier area and was taken into account in Vol. 2, pages 8.3-13 and 8.3-14. Water rights available to absorb such growth were discussed in Vol. 2, Page 8.3-41.

11.11 Response: Comment noted; revised page containing changes (underlined) is included in the Addendum.

11.12 Response: Comment noted; see Letter 11 Response 10.

11.13 Response: The 45,600 acre-feet use is not an additional use but a change in use from present patterns. This change would require the purchase of existing rights and approval of the State Engineer for change in both type of use and point of use. The revised page (Vol. 2, Page 8.3-41) containing change (underlined) is included in the Addendum.

11.14 Response: Recent studies in the Delta area have not shown evidence of subsidence with the present pumping. However, some evidence has been found in the Milford area. The aquifers in the Sevier Basin do contain clays and could be expected to have some subsidence. The inconsistent levels of pumping, allowing aquifers to be recharged, is thought to be one reason that subsidence has not occurred.

United States Department of the Interior

12

HERITAGE CONSERVATION AND RECREATION SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO: 550
BLM

AUG 15 1979

Memorandum

To: Bureau of Land Management
Richfield District Manager, Richfield, Utah

From: Director, Heritage Conservation and Recreation Service

Subject: Review of the Draft Environmental Statement for the Intermountain Power Project

This is in accordance with Assistant Secretary Guy Martin's July 12, 1979, memorandum requesting review comments on the document noted above.

Several natural areas and recreation lands which involve HCRS programs could be impacted by the various proposed transmission line routes.

1 Cima Dome, Weiser Bowl, Virgin River, Mount Moriah, Wheeler Peak, Spring Valley Swamp Cedars and Mount Grafton are all natural areas along the various routes which are currently being evaluated for designation as National Natural Landmarks.

Cave Lake State Park, Echo Canyon State Recreation Area, and Cathedral Gorge State Park are parks acquired or developed with monies from the Land and Water Conservation Fund.

From our quick analysis of the alternative plant sites and their associated transmission line routes, we believe that the Lyndyl site would create less severe impacts on recreation lands and natural areas. Selection of the Lyndyl site would make it possible to use the Lyndyl-to-Gonder transmission line route, which would create a low visual impact on Cave Lake State Park, rather than a high impact as predicted for the Lincoln-to-Gonder route used by the Salt Wash site. Echo Canyon and Cathedral Gorge would presumably be
2 avoided by the Lyndyl-to-Gonder route.

With regard to potential National Natural Landmarks, it appears that the Lyndyl-Gondor and Lyndyl-Highland Junction routes would create a low visual impact on Wheeler Peak Scenic Area and Mount Moriah, and a medium intensity impact on Spring Valley Swamp Cedars. The routes associated with the Salt Wash site would create a high visual impact on Mount Grafton and a low impact on the Virgin River area. The Highland Junction-Eldorado-Victorville segment common to both alternate transmission line systems would avoid Cima Dome if the Northern Corridor alternative routing were chosen, as we suggest.

In summary, we would prefer the Lyndyl site, with the transmission line
2. routes in Nevada and California following an alignment from Lyndyl to Gonder and from Lyndyl to Highland Junction to Eldorado to Victorville, the latter segment along the Northern Corridor.

In separate attached documents are our comments concerning historical and archeological resources and our comments from our Mid-Continent Regional Office in Denver. The comments on the preceding page were supplied in part by our Pacific Southwest Regional Office in San Francisco.

Harold D. Green

bcc Chris Therral Delaporte

Attachments

9-63

United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
WASHINGTON, D.C. 20240

IN REPLY REFER TO:

Advance-BLM

Preliminary Draft Environmental Statement for Intermountain Power Project, Utah: Historic and Archeological Resource Comments

It is apparent from cited references throughout the draft environmental statement that discussions of cultural resources and potential impacts refer to "known" historic and archeological sites. However, from information contained in the statement it is unclear which areas of the proposed project have been surveyed to date and with what level of field coverage. For example, page 2-50 cites Dickey's (1977) technical report for cultural resources recorded "as of 1977." For transmission systems, archeological and historic resource identification has been based on "sample inventory" work. In order to fully assess the potential impacts of the project, the following additional information should be included in the environmental statement:

3

(1) A brief description of the type of sample inventory and methods used for surveying the transmission line route;

(2) A brief description of the types of surveys done to date of the other project areas; and

(3) A brief description of the areas still to be surveyed and the type of investigation planned for these areas.

Special known associations of archeological sites and topographic or other natural features that may be particularly susceptible to project impacts (e.g., permanent water sources) should be pointed out in the statement.

Any programmatic or other Memorandum of Agreement either being developed or in force among BLM, the Advisory Council, and the various SHPOs for mitigating measures should be mentioned and/or included in the statement.

Specific Comments

p. 1-64, para. 5: Change "Historic Preservation Act of 1966" to National Historic Preservation Act of 1966, as amended. Change "Archaeological and Historical Data Preservation Act of 1974" to Archeological and Historic Preservation Act of 1974.

4

p. 1-67, para. 1: Suggest that wording on paleontological investigations be changed. The second sentence would read: "The paleontologist would conduct an intensive survey of all areas to be disturbed which are identified by the appropriate federal official (in consultation with paleontological experts knowledgeable about the area) as having high potential for paleontological resources."

5

6 p. 8-56, fig. 8-20: Missing "Cultural Resources" and "Paleontology" captions.

United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
MID-CONTINENT REGION
DENVER, COLORADO 80225

IN REPLY REFER TO: NC 300

MAILING ADDRESS:
Post Office Box 25367
Denver Federal Center
Denver, Colorado 80225

Memorandum

To: Chief, Division of Environmental and Compliance Review
Attention: Carrolena Key

From: Assistant Regional Director, Land Use Coordination

Subject: Review of Draft Environmental Statement for the Intermountain Power Project (IPP), Utah, Nevada, and California

The portions of this project within Utah, including the transmission line corridors, will not affect any recreation programs administered by this agency.

However, these documents do not respond to several issues raised by this agency in correspondence of March 9, 1977, and August 29, 1977. The final statement should describe measures to mitigate the anticipated adverse impacts to recreation facilities as a result of the population increases. In addition, the statement should give specific park development plans for the new town. The project should also include plans to mitigate adverse visual and other impacts to parklands along transmission line routes. Finally, the statement should describe the impacts of the proposed reservoir on Fremont River flows and assess the loss of recreation and/or wildlife values.

7

As requested, we are attaching copies of previous correspondence on this project.

Robert J. Arkins

Attachments

69-6

12.1 Response: All recreation attractions referred to were identified and impacts to these areas were analyzed in the DES (Weiser Bowl is a portion of the Muddy Mountains as identified in the DES.)

Text additions in the FES identify Cane Lake State Park, Echo Canyon State Recreation Area and Cathedral Gorge State Park as parks that were acquired or developed with monies from the Land and Water Conservation Fund, and apply the follow mitigation to these areas:

> No property acquired or developed with assistance under section 6-f of the Land and Water Conservation Fund Act shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonable equivalent usefulness and location.

Revised pages (Vol. 1, pages 1-67, 2-65, and 2-66 contains changes (underlined) included in Addendum.

12.2 Response: Your preference for the Lynndyl site is noted.

12.3 Response: Class II sample cultural resource inventories at the 10 percent level were conducted during the summers of 1977 and 1978 for the purpose of determining which alternative action would have the least impact. Along linear facilities such as transmission lines, sampling areas 1/8 mile by 1/2 mile (40 acres) were examined. Linear facilities were divided into 5-mile segments and one sample unit was located in each segment. For other facilities such as the plant site which comprises a large area, sampling was conducted at the 25 percent level, this usually being made up of a single quarter-section of each section involved in the area in question. Additional surveys as required by Memoranda of Understanding would be conducted prior to any surface disturbance.

Memoranda of Understanding and approval of SHPOs are included. See Letter 1 Response 1.

12.4 Response: Comment noted; revised page with changes (underlined) included in Addendum.

12.5 Response: Comment noted; revised page showing deletion (arrow) included in the Addendum.

12.6 Response: "Paleontology" should be the last line and "Cultural Resources" the line above. Since this is a rather complex foldout, the page is not reprinted for the one graphics change.

12.7 Response: The ES discusses the anticipated impacts of increased population on recreation facilities but does not address mitigations to the impacts. These impacts could not be controlled through any stipulation applied to the applicant. Therefore, appropriate agencies responsible for managing identified recreation facilities would likely mitigate impacts, depending upon available manpower and funding.

Impacts of the proposed reservoir on Fremont River flows are discussed under "Water Resources" in Vol. 1, pages 3-16 and 5-3 and in Vol. 3, Page 4. Changes have been made to describe impacts of the proposed reservoir on Dirty Devil River flows. The revised pages containing changes (underlined) are included in the Addendum.

Impacts of the proposed reservoir on wildlife values have been analyzed in the DES discussed under "Animal Life" in Vol. 1, pages 3-23, 5-5, and Vol. 3, page 6. The analysis identifies that loss of water flow in the Fremont River downstream from the reservoir would reduce pheasant, quail, deer, and non-game animal habitat and numbers. The aquatic species in the Fremont River were considered to be insignificant (no game species nor threatened or endangered ones) in an initial analysis and were not considered in the DES. Impacts to the Dirty Devil River system have been added to the text. Revised pages (Vol. 1 pages 3-22 and 3-23) (Changes underlined) are included in the Addendum.

No recreational values were identified on the Fremont River east of Capitol Reef National Park. Although the Dirty Devil River into which the Fremont flows provides floatboating opportunities from April through May, it is not anticipated that the diversion of the Fremont River from November through March would impact floatboating opportunities on the Dirty Devil. However, loss in river flow could reduce or eliminate the potential of the Dirty Devil River for Wild and Scenic River Designation. A discussion of impacts which the proposed reservoir would have on Special Designation values has been included in the text on pages 3-33 and 5-7 Vol. 1; Page 12, Vol. 3. The revised pages containing these changes (underlined) are included in the Addendum.

The environmental statement does not give specific park development plans for the new town because park planning would be done during the "Conceptual Planning" phase (Phase II) of the "New Town Development Plan" (see Vol. 1 Page 1-55). Wayne County Commissioners and IPP have agreed to continue Phase II planning efforts if and when the Salt Wash plant site is approved by the Secretary of the Interior. Millard County Planning Committees and the Six County Association of Governments have assumed the planning for parks and recreational facilities in the vicinity of Lynndyl, should it be approved by the Secretary of Interior.

Stipulations to mitigate adverse visual and other impacts to all lands including "parklands" (recreation attractions) located along the proposed and alternate transmission lines are listed under "Applicant Proposed Design Feature and Government Agency Standard Requirement" in Volume I, pages 1-62, 1-63, 1-64, 1-65, 1-66 and 1-67, and under "Mitigating Measures Not Included in the Proposed Action," on the following pages: Volume I, pages 4-1 through 4-6, 8-27, 8-28, 8-34, 8-43, 8-44, 8-51, 8-63, 8-64, 8-75, 8-76, and Volume II, pages 8.4-1 through 8.4-4, 8.8-6, 8.8-13, 8.8-20, 8.8-28, 8.8-34, 8.8-39, 8.8-44, and 8.8-49.

Office of Sevier River Commissioner
DELTA, UTAH R.F.D. 84624

13

August 15, 1979

W. ROGER WALKER

Mr. Donald L. Pendleton, District Manager
Bureau of Land Management
150 East, 900 North
Richfield, Utah 84701

RE: Lynndyl Alternative Site EIS

Dear Sir,

Comments are offered concerning the following categories:

1. Water Resources - 8.2-28
   8.3-30
2. Land Uses - 8.3-41
   8.3-15
   8.3-23
   8.3-36
3. Water Quality - 8.2-28
   8.2-21
4. Adverse Impacts - 8.5-2

1. WATER RESOURCES

8.3-20 D M A D Wells.

The D M A D Wells were drilled for supplemental supply and water quality control. The right is for 36,722 acre-feet. This quantity would not be sufficient in the dry cycle to increase the irrigated acreage to the 58,000 acres noted on page 8.2-76. Many management factors would determine the amount pumped, however it could be assumed that the pumping would extend to whatever amount up to 36,000 acre-feet was possible and economical. The I P P Analysis was based on a pumping figure of 24,000 acre-feet

1

maximum in the dry cycle, therefore a distinction should be made that the increased pumping is not because of the I P P Project. The I P P withdrawal from the D M A D Reservoir increases the capacity during the winter months which will allow the wells to be pumped more in the spring and late fall and possibly less during the summer months.

1

2. LAND USES

Table 8.2-11 lists the irrigated land within the D M A D companies service area as Delta - 8,530 acres, Melville - 9,060 acres, Abraham - 15,580 acres, and Deseret - 17,860 acres. The Intermountain Power Project Hydrology Report, Table B-5 Land Use Delta Area 1963 Hamer, et al., 1978 has Delta, cultivated and idle, 18,800 acres, Melville - 8,980 acres, Abraham - 9,540 acres, and Deseret - 16,400 acres, which would be more accurate.

2

Table 8.2-12 lists the D M A D Service Area Cropping Pattern and consumptive use of water. The annual yield per acre probably represents an average yield that could be projected with present farming methods. For example, the yield of 400 lbs/acre alfalfa seed on approximately 40 percent of 4,280 acres yields 672,000 pounds of alfalfa seed. This projection is then compared with Utah's 1977 alfalfa seed production resulting in the conclusion that there would be a 51 percent reduction of the state's alfalfa seed production. The 1977 alfalfa seed crop acreage and yield is obviously much less than the projection presented in Table 8.2-12.

3

An obvious fact can be stated; Delta area farmers are not going to retire 4,280 acres that could produce 51 percent of Utah's alfalfa seed. It would be more appropriate to assume that the land remaining (91.5%) would produce more than the average expected and thus the reduction would be somewhat less than the 8.5 percent reduction in acreage.

Most agricultural areas have some unprofitable operations and the Delta area is no exception. There are probably more than 4,280 acres which do not show a profit. It can be assumed the marginal land would be retired first, therefore the Table 8.3-16 Projected Decrease in Agricultural Production and Earnings, net value in 1976 dollars presents an exaggerated economic impact. The net earnings impact could be zero.

3. WATER QUALITY

On page 8.2-28 the return flows at the Lynndyl gage are listed as between 3,000 and 6,000 ppm. The return flow at the Lynndyl gage according to U.S.G.S records are between 2,300 and 3,100 p/m. The return flows <u>below</u> Gunnison Bend Reservoir are in the range of 3,000 to 6,000 ppm.

The statement is made (8.2-28) that Gunnison Bend functions as a drain when it is drawn down at the irrigation season's end resulting in poorer quality water. The river above and Gunnison Bend Reservoir always functions as a drain. A degradation of the water quality is not noticeable when high volumes are being

delivered but once the surface inflow ceases degradation occurs regardless of the water level in Gunnison Bend Reservoir.

At the top of page 8.3-21 the first sentence states that Gunnison Bend water quality would remain unchanged. It is elementary that if the water quality in D M A D is improved and Gunnison Bend receives its water from D M A D, then the water quality in Gunnison Bend must also improve. Improving the water quality in Gunnison Bend Reservoir would result in a major beneficial impact. Standard formulae used to compute such effects indicate there would be a reduction of the leaching fraction of 50 percent, and crop yields with the improved water quality to begin the season would improve 10-25 percent.

Measurements are available to confirm that with the I P P diversion and the pumping of the D M A D wells the salt concentration in D M A D could be reduced to 695 ppm. This water as a dilutant for Gunnison Bend Reservoir would make the water quality in Gunnison Bend a very satisfactory 1,350 ppm. Additionally the increased capacity created by the I P P diversion in the fall months would make it possible to have the residual pool at Gunnison Bend at the irrigation season end at approximately 1,000 ppm, thus reducing the salt concentration further for the beginning of the next irrigation season. It is interesting to note straight well water, would only dilute the 2,000 ppm winter make to 1,200 ppm.

Under Adverse Impacts page 8.5-2 the seepage loss to the open drain system is stated as 2,100 acre-feet. The most expensive

project constructed on the Sevier River was the drainage system in the Delta area to carry off the salt load of the Sevier River. Getting the unconsumed water through these tight clay soils into the drainage system is a major problem. For example, 2,100 acre-feet of water in excess of the soil's water holding capacity can raise a water table one foot on 21,000 acres. Reducing the water table by 2100 acre-feet is a major benefit to the agricultural system.

Sincerely,

Roger Walker

W. ROGER WALKER
Sevier River Commissioner

39-6

13.1 Response: Comment noted; revised pages (Vol. 2, pages 8.2-76 and 8.3-20) containing changes (underlined) included in Addendum.

13.2 Response: Comment noted; see Transcript 11 Response 2.

13.3 Response: Discussion of your comment included in Transcript 11 Response 3.

13.4 Response: Discussion included in Transcript 11 Response 4.

13.5 Response: Comment noted; see Transcript 11 Response 5.

13.6 Response: Comment noted; see Transcript 11 Response 6.

13.7 Response: Comment noted, see Transcript 11 Response 7.

13.8 Response: IPP's proposal would result in some operation changes of the lower Sevier River system. These changes would improve present water quality in the system including Gunnison Bend Reservoir.

13.9 Response: Comment noted; see Transcript 11 Response 8.

STATE OF CALIFORNIA — EDMUND G. BROWN JR., Governor

AIR RESOURCES BOARD
1102 Q STREET
P.O. BOX 2815
SACRAMENTO, CA 95812

14

August 13, 1979

Paul Howard
Bureau of Land Management
Utah State Office
136 East South Temple St.
Salt Lake City, Utah 84111

Dear Mr. Howard:

This is in response to the Bureau of Land Management's request for comments on the draft Environmental Statement (DES) for the Intermountain Power Project (IPP). This project will consist of four 750 MW coal-fired generating units, related transmission lines, and a railroad to transport coal to the plant. The coal for IPP will be supplied by the Wasatch Plateau Field and the Emery Field.

We have evaluated the DES and offer the following comments:

1. The DES does not consider the impact of emissions associated with the transport of coal or the coal handling facilities. These emissions would have considerable impacts on air quality and would use significant amounts of the allowable PSD increments. Emissions from transporting coal consist of railroad locomotive emission and fugitive coal dust emissions from the coal cars. These emissions can be mitigated through the use of electric locomotion and covered coal cars. The emissions from the coal handling facilities are primarily coal dust emissions. This coal dust can be controlled by enclosing critical areas where coal is mechanically moved, lowering the pressure in the enclosure using induced draft fans and venting the air through particulate control devices.

2. Oxides of nitrogen (NOx) are precursors of photochemical oxidant. There is no evidence that relative humidity has any influence on this relationship as suggested in the DES. The reduced levels of oxidant found in plumes is due to the scavenging effect of the NO and NO_2 reaction. This is a short term effect and the NO_2 that will react with available hydrocarbons to form additional photochemical oxidant. The control of NOx emissions is very important in controlling downwind oxidant formation.

3. The proposed emissions of NOx do not comply with the new NSPS of 0.5 lb/10^6 BTU for utility boilers using sub-bituminous coal. Additional NOx control may be available in the near future from either catalytic or non-catalytic selective reduction using ammonia. Although these technologies are in the demonstration phase of development, Pacific Gas and Electric has at least agreed to consider the use of such technology for its proposed California coal fired power plant.

4. The impact of SO_2 emissions can be mitigated by using SO_2 scrubbers with greater than 90% removal efficiencies. There are commercial scrubbers available with guarantees of greater than 95% control.

5. Greater degrees of control is also available for emissions of particulate matter. Guarantees of 0.005 lb/ACF (about 0.015 lb/mmBtu) are available for both baghouses and ESP before the SO_2 scrubber. Baghouses have achieved even greater degrees of control on similar projects.

In conclusion, we believe that emissions from this project can be further controlled through the use of more advanced pollution control systems that are commercially available. Since IPP may be located in close proximity to several national parks, and since California would receive almost 60% of the electrical power, we believe that it is good public policy to use the best controls in order to prevent a shift of air quality problems from urban to rural areas.

We appreciate this opportunity to offer our comments on this project. If you have any questions, please feel free to contact George Lew of my staff at (916) 322-2886.

Sincerely,

Harmon Wong-Woo, Chief
Stationary Source Control Division

69-6

14.1 Response: According the the "Final Environmental Statment Development of Coal Resources in Central Utah," "neither of these sources (locomotive exhaust and dust blowing off the coal loaded in open cars) are expected to be significant factors in the future regional air quality."

14.2 Response: The literature source cited was not cited in its entirely. The revised page (Vol. 1, Page 3.5) is included in the Addendum. The reference to relative humidity was never fully explained in the literature and should be deleted. The literature also went on to conclude that ozone (photochemical oxidants) is scavenged in the plume but that long-term concentrations would rise to ambient levels and occasionally, if in the presence of high hydrocarbon levels, would rise above ambient levels. Therefore, paragraph on ozone in the Salt Wash analysis (Vol. 1, Page 3-5) has been changed to reflect this comment.

14.3 Response: Project proponents have indicated to BLM and the EPA that the power plant design would be changed to meet the revised New Source Preference Standards for nitrogen oxides, per June 11, 1979 Federal Register Notice.

14.4 Response: The project proponents have indicated to BLM, EPA, and the State of Utah that the IPP power plant at Lynndyl would meet all applicable Federal and State of Utah air quality standards and regulations. The proposed air pollution control systems at the Lynndyl site conform to the best available control technology as interpeted by the EPA and the State. Additional control does not appear to be warranted. Air quality impacts from the Salt Wash site are shown in Vol. 1, pages 3-1 through 3-14. Further control would be necessary if the Secretary of the Interior approves the Salt Wash site. Conformance to all applicable air quality regulations would be certified by the Utah Bureau of Air quality and EPA prior to project construction.

Nelle, Utah
Aug 22 1979

Bureau of Land Management
Richfield Utah
Dear Sirs:

I would like to express some of my thoughts on
1 the proposed P.P. plant at Lynndyl, Utah. For me,
I think this is too good a farming area to take
all of our water to produce power to send to California.
There has been millions of dollars worth of alfalfa seed
raised in this area and sold at premium prices all
over the nation. We raise lots of top quality hay
that is sold at high prices all over the western
2 states and even sent to Japan. One of the big
beef fattening yards of Utah is in this area and
the Delta & Oasis Cheese producers send cheese to the
coast. In fact, much of the world known Cash
Valley Cheese is made from milk produced here, as
in the last few years a lot of large dairys are
being built up here. What will happen to all
of this if we lose our water?

They say there is lots of marginal ground here.
I say its marginal farmers. But good farmers
or most of this land and it will produce if used
properly. This is an arid place, but our water
system has been one of the best. We have agriculture
people come from all over the world to see our
3 irrigation system here and study it. If they take
50,000 acre ft water, that will ruin our system.

We all depend on deep wells for our culinary
water. They are buying a lot of bullets and going to
4 pump them all the time too. Just how long will
this underground water last? The water table is
going down so fast all over, it makes you
wonder if we will even have enough water to
drink.

J.P.P.

Some of the people who would like to see Oasis
5 run, say the young people can't stay here as there
is nothing for them to do. We have our children
who all left and got their schooling and married,
one by one they moved back to our area to settle.
They all have good jobs and nice homes so its
probably if they went to come back.

The County is really counting on the Texas
J.P.P. will pay. But it just may turn out like
over to Huntington Power plant, when the county is
really upset because they aren't going to be
getting all those taxes they had planned on, as
Texas don't have to pay taxes on its share they
own. That will leave the local people paying
all the expense on water, sewer, roads, school,
etc. for the influx of people. So this farm when
most of the people are going into Calif. and we didn't
ask for it anyway?

We had a petition against it when it first
started, that had nearly 300 names, all kinds of
families, on it. We sent it into the Brunns
Mathison and it completely ignored it. The leaders
they had were so one sided the people who were
opposed were never given a chance to say anything
and they just quit going to them.

The few men who started the whole thing are
just out to make a fortune, not caring what it
does to our area or the people who would like to
stay here and keep on making a living as we
have been doing in the past. We still feel that if
that water was kept here and used properly on the
farms it would furnish employment for far more
local boys than J.P.P. ever will.

Nelle Jackson
Nelle Utah 84634

9-70

15.1 Response: As indicated in Vol. 2, Page 8.2-49, the Soil Conservation Service has not yet completed its inventory of prime and unique farmlands in Millard County. The productivity of the lands that would be retired is indicated by the annual yield figures on Table 8.2-12. The potential losses in crop production are analyzed on Table 8.3-10. The trade-off of agricultural lands would be for 3,000 megawatts of electrical generating capacity, of which 42 percent would be available to consumers in Utah (see Vol. 1, Table 1-1).

15.2 Response: These losses to the local economy do not reflect the income received by farmers that sell their water to IPP. The figures presented represent a "worst probable case" analysis.

The conversion of water from agricultural to industrial use would reduce agricultural earnings approximately as shown on Tables 8.3-15 through 8.3-18 (Vol. 22 pages 8.3-44 and 43). The projected total net loss of agricultural income under scenario 1 (DMAD service area) would be about $778,000 or about 5 percent of the area's gross agricultural income of $14,161,000.00. The project total net loss of agricultural income under scenario 2 (CUC service area) would be $981,000.00 or about 7 percent of the gross agricultural income.

15.3 Response: Transferring an average of 39,200 acre-feet of water now used in the Lower Sevier River irrigation system to an industrial use would only alter the water system operation. This alteration would result in about 9 percent less water available in irrigation and some operation changes of the system's reservoirs and canals. These operational changes are expected to result in an improvement in water quality facilities and even more efficient use of the remaining irrigation water than is possible at present.

Refer to the discussion of these changes in Vol. 2, pages 8.3-12 through 8.3-21.

15.4 Response: The Delta ground water basin has been closed to further appropriation by the Utah State Engineer. Only those existing rights which have not been fully developed will be allowed. When the present ground water allocation is fully developed, it is expected that there will be a stabilization of ground water levels and that all existing rights including municipal rights will be able to be served from the balanced supply. IPP use would also be served from existing rights which they would purchase.

15.5 Response: The question regarding the taxability of portions of power plants owned by municipalities, prepayment of taxes, in lieu of tax payments, and front-end money are unanswered at this time. Until laws are made, changed, or clarified, definite answers to these questions will not be possible. For more discussion of this, see Letter 8 Comment 3 and the attached letters from IPP and the State of Utah.

To: Project Leader. IPP E.S. - Lynndyl Site

16

After reviewing the IPP proposal for the Lynndyl site I have the following comments as they relate to the wildlife section. Basicly my comments are made to correct errors I felt were made in the discription of the current wildlife situation in the area.

1 Figure 8.2-14 - fails to identify that:
(1) California Quail exist throughout Fillmore and west to Flowell,
(2) California Quail exist in Callao, Utah as they were transplanted into the area last year

(3) Bald Eagles dont concentrate at Fish Springs in the winter time

1 Figure 8.2-13 - fails to identify that
2 (1) a small resident herd of Elk exist North & West of Nephi in the East Tintic Mtn's. This area also supports substantial population of wintering Elk.

3 Figure 8.2 E - Part 1
(1) Some animals (antelope) occur from west of Lynndyl, intermittently to Marjum Junction and
3 all through the Confusions
(2) Deer occur through the Confusions and across Marjum pass

4 Figure 8.2E - Part 2
(1) Antelope occur from the State line east to the Confusion Mtns.

5 Table 8.8-1 - fails to identify that:
(1) there are Elk Wintering and some summer range North and West of Nephi in the Tintic Mountains.

For the most part the assessment of the wildlife situation has been done quite well other than for those items mentioned above.

Curtis Warrick
Box 1002
Fillmore, Utah 84631

16.1 Response: A change in the graphics depicts California quail in the vicinity of Callao and Fillmore-Flowell. Revised page (Changes of Figures 2-13 and 2-14) included in Addendum. Additional quail populations in the area could cause hunters to be somewhat more dispersed but would not materially affect the assessment of impacts presented on Page 8.3-24 which states that the effect of harvest on bird populations is expected to be low.
According to 1976 U.S. Fish and Wildlife Service records four to five bald eagles spent the winter at the Fish Springs National Wildlife Refuge.

16.2 Response: Figure 8.2-13 has been altered to include the elk area on the East Tintic Mountain. Revised figure is shown as (Change of Figures 2-13 and 2-14" in the Addendum. This does not affect the discussion of impacts on big game presented on Page 8.3-23, which states that more hunting could reduce big game populations in Central Utah, because elk expansion into this area would not be affected by hunting for several years and then it would be restricted by UDWR.

16.3 The profiles identify only the environment that would be affected by construction and operation of the proposed transmission lines. No substantial impacts on the dispersed antelope populations were identified from construction and operation of the proposed transmission lines and, therefore, the antelope range was not shown on Figure 8.2-E, Part 1. The antelope range is shown for the regional setting on Figure 8.2-13 where antelope would be affected by recreational and illegal activities.
The deer range through the Confusions and across Marjum Pass is not identified as critical and is not included on Figure 8.2-E Part 1. Deer are identified as area-wide for the regional setting (Figure 8.2-13) where they would be affected by recreational and illegal activities.

16.4 Response: See Letter 16 Response 3. It is assumed the comment refers to Vol. 2, Page 8.2-34 Figure 8.2-13. Map does indicate presence of antelope from Nevada-Utah State line eastward to and beyond Confusion Mountains.

16.5 Response: Figure 8.2-13 has been changed. See Letter 16 Response 2.

9-73

721 Second Avenue
Salt Lake City
Utah 84103

23 August 1979

Donald L. Pendleton, District Manager
Bureau of Land Management
Box 768
Richfield, Utah 84701

17

Dear Mr. Pendleton:

Please include this written comment on the IPP environmental impact statement.

The nature of my comments will fall into four classes: Land-use and quality of life, water and the Central Utah Project, Conservation, and finally the alternatives. The proposal is put together very well.

<u>Land-use and Quality of Life</u>. The impact on Fisheries and wildlife through increase hunting and increased fishing and increased poaching is clearly defined. These impacts are clearly mitigatable if there were more law enforcement agents hired and IPP finance of cost to maintain hunting and fishing
1 opportunities with poaching punished by two year jail term. However the State just wants the profits from IPP without the mitigations. IPP participants only want the glory of the power plant and show no concern over the unnecessary losses of fishing and wildlife.

There is one legal question that should be pursued. To be a resident hunter or fisherman, the only requirement that might be necessary to obtain a resident license is perhaps a drivers license from Utah. Twenty five hundred workers will be qualified even though they may have worked one day in Utah. Should not
2 these same workers be qualified to vote in Utah also? Should not their children be allowed into University of Utah at the resident rate? It seems that a resident should be defined by the same criteria.

Off-road vehicles is again listed as an unmitigatible issue. Yet as a part of the stipulation and permit system the Bureau of Land Management could close the entire 'impact zone' from off-road vehicle use for the duration of the construction. Again as part of the permit and stipulations, IPP could furnish deputized personnel to patrol the closed areas for the duration of the construction. More is a stake than just tracks. Damage
3 to range and watershed just must not be permitted. Biological processes must be allowed to continue without tracked intrusions. Certainly once a 'habit' is started as in Buckhorn Wash with the construction of Utah Power and Lights plants, it is impossible to stop. Again if the State would be interested in anything besides royalties and profits, it could make energy development mush less offensive and much less objectionable. It seems that BLM could require that IPP post a Million Dollar bond to cover all abuses on public lands that is related to plant construction.

<u>Water and the Central Utah Project</u>. Many farmers in the Delta region sold their livihood and rights to some 40,coo acre feet of water to the IPP. It is said that the State Engineer or someone has said that these farmers are hence ineligible for Central Utah Project water should it ever be delivered. These documents should be a part of the Impact Statement. The farmers may be dead but then can the land receive CUP water? What changes in the law is necessary to allow the farmers to receive this water?
4 The financial advantages are obvious. The farmers sold to IPP for 79,000,000 dollars or there abouts, while the equivalent CUP water for M and I might cost 240,000,000 dollars for thirty years use. Yet the farmers might be able to get CUP water at $25 an acre foot(or $10) and for 30 years pay out only 30,000,000 dollars (inflated) (or 12,000,000 dollars). And the philosophical question should be asked, if Delta farmers are willing to sell their water, why should the entire south slope of the Uintas and Utah Lake be denuded just to deliver water to the Delta region? Certainly these issues should be addressed!

<u>Conservation</u>. There has been mention of the great achievements of conservation in reducing the energy requirements in California. Yet I believe that the proponents of the plant wanted the plant built by 1980. If the plant is built, would not it be instead of conservation? It seems that all the conservation efforts in California and specifially those as practiced by the municipalities should be described in detail - and how much energy is saved by each program.

I have worked in Utah on energy conservation as testifying before the Public Service Commission. I have found that there is not any energy conservation practice by the utilities to discourage energy consumption. In fact most utilities are still promoting
5 energy sales and this includes Utah Power and Light and Mountain Fuel Supply. Large users still receive energy at discount prices and people who have not increased their energy consumption in the last ten years are paying for plant capacity for all the new houses and all those who have increased their energy consumption. The municipalities in Utah are not any exception to these rules. Since 42% of IPP is commited to Utah and up to 50% must be available to Utah, it seems that Utah should at least practice the same energy conservation as practiced in California. Again the State of Utah is not interested in energy conservation for it receives too many royalties from energy waste. Consequently there is no encouragement for solar heating in Utah even though all those million dollar houses high on the hill sit in the sun all day long.

<u>Alternatives</u>. The alternatives are very weak section. It is strictly utility data with no outside consultations. For instance, reserve margin is a big arguement for IPP. Yet each unit is 750 megawatts. If one unit goes out (say the UPI unit), Utah Poer and Light losses one-sixth of its total capacity. This has to be made up by purchased electricity which the Impact Statement
6 says is very costly (However Sierra Pacific in Reno purchases a half of Emergy unit cheaper than the customers of Utah can buy the energy, and further more the residents in Reno have lower rates than Utah Power and Light residents with Renos electricity largely coming from Utah Power and Light and oil burning generators). This would be a large burdon placed on

Utah Power and Light customers. So would the 20% reserve capacity be a large burden. Yet if the IPP units were 850 megawatts, sacrifices some economies of scale, the need for large reserve margins and large block purchases of electricity in case of failure could be reduced, especially if qualified engineers could be obtained. The smaller units could better serve the smaller municipalities as well for the same reasons. Perhaps only Los Angeles might suffer from the economies of scale argument. Power plants are now designed to increase the rate base at the quickest speed and such designs do not necessarily provide the customers with the most economic energy or do not necessarily encourage energy conservation. 6

I believe the Edison of Southern California is experimenting in with coal-fired energy and co generation or combine-cycle generation where several turbines generate electricity from the steam and several turbines generate electricity from the gases that produce the steam. Such generation would obvious be far more efficient and at the same time save energy- if any one in Utah is concerned with saving energy. 7

Solar energy is treated under the alternatives. However, solar heating- a technology which has been used in New England since the early 1900's, is no long experimental. Solar heating is not mentioned as an alternative. This is bad in that so many condominiums are now all electric and their large roof surface could readily support solar panels. More and more houses are becoming all electric. Solar heating certainly could replace electric heat in all regions of Utah. However, again no one in the State of Utah is interested in conserving energy when too many royalties are at hand. 8

For so many years now we have been brainwashed in thinking that the more energy we consume, the higher is our standard of living. The utilities still promote this idea and strongly believe in this idea. Yet from the Impact Statement and other sources, I find that MY standard of Living will decrease with more and more power plants and more and more oil and gas well being developed. The life I enjoy as the wildlife and plants, and fishes, and good watershed terrain, good range land, and peace and quiet in the public lands will all disappear. My utility bills will keep on rising in order to pay for plants (power) that I do not need. (If others need the electricity- let them pay for it, especially in Utah where we are all so proud of paying our own way in all matters!) Day by day MY standard of living decreases,, while energy is wasted away at MY expense and at the expense of future generations

Respectfully yours,

Peter Hovingh

17.1 Response: Monies available from IPP and Utah's ability to use these funds for community needs, including enforcement and mitigation, are discussed in Letter 8 Response 3.

17.2 Response: State residency requirements are within the jurisdication of the State of Utah. IPP has no jurisdiction over these requirements and, therefore, they are not considered in the ES.

17.3 Response: Under regulations, BLM could require IPP to post a bond as a part of the decision process. The other parts of your comment are discussed in Transcript 17 Response 1.

17.4 Response: Comment noted; see Transcript 17 Response 2.

17.5 Response: Comment noted; energy conservation is discussed in Transcript 18 Response 2.

17.6 Response: Reserve margin criteria are established by each individual utility, as discussed in Appendix I-1, Vol. 3. The energy generated by IPP would be sold to each participant on a pro-rated basis. Therefore, if one unit goes out of service, the loss of that energy would be shared by all of the participants, not just one. The size of units selected for IPP was determined by appropriate engineering studies and consultations involving representatives of all the participants. The selected unit size does not impact the reserve margin criteria established by each of these utilities.

Cogeneration or utilization of waste heat from power plants for space heating has existed in certain areas such as Boston and New York City for many years. However, the user of the waste heat must be in close proximity to the source. No potential users are presently located in the vicinity of the Salt Wash proposed site or the Lynndyl alternative site.

Waste heat from other industries (e.g., oil refineries), can be used to generate electricity. Two small units of less than 50 MW are being studied by one of the IPP participants (Los Angeles Department of Water and Power). Because of uncertainty of fuel availability and the difficulty of designing generators to fit changing fuel sources, it is not feasible to rely on cogeneration for all or part of the baseload capacity of the IPP participants.

The Southern California Edison Company will be developing a coal-gasification and combined-cycle commercial demonstration project near Daggett, California. Confirmation of this must wait until the experiment is completed. Technical and economic feasibility has not been demonstrated for this technology.

17.7 Response: Southern California Edison is presently experimenting with combined-cycle generation. Until the experiment is completed and the analysis results known, there is no way of predicting whether this will be a feasible alternative for Central Station generation. Refer to Letter 17 Response 6 for further information.

17.8 Solar heating is not an alternative method of power generation, but is part of energy conservation which is discussed in Transcript 18 Response 2.

CALIFORNIA ASSOCIATION OF 4WD CLUBS INC.

August 22, 1979

18

Mr. Donald L. Pendleton
District Manager,
Bureau of Land Management
150 East 900 North
Richfield, UT 84701

Subject: Intermountain Power Project DEIS

Dear Mr. Pendleton,

1 We received notice of the subject statement being made available for public review and comment. Although there is no statement available for us to review, we request special consideration be given to utilization of the project's ROW for use as an Off Road Vehicle Recreational Trail.

This same request has been made on the Oever to San Diego project and the BLM has invited us to submit a special recreation permit for this same purpose. Please advise if the subject project will also extend consideration to our request? Reply requested at your earliest convenience.

Sincerely,

Ed Dunkley
Administrator

P. O. Box 669 • Sacramento, California 95803 • 916-444-6504

9-75

18.1 Response: In most places ROW roads would be available for general public access, including off road vehicle (ORV) access. Exception would be in areas where Federal ORV designations preclude vehicular use of trails, and in areas where IPP would be required to close ROW roads. The utilization of any portion of the ROW roads for organized ORV races or for actual designation as an ORV trail would require coordination with IPP and with the Federal and State agencies through whose lands the ROW would pass, and would require separate additional environmental assessment to evaluate potential impacts from ORV use.

FRIENDS OF THE EARTH
124 SPEAR SAN FRANCISCO CALIFORNIA 94105
415 495-4770

Moab, Utah
August 9th, 1979

19

Mr. Ronald L. Rowlinson
District Manager
Bureau of Land Management
Richfield, Utah, 84701

Dear Mr. Rowlinson:

The following comments regarding the draft environmental impact statement for the proposed Intermountain Power Project are submitted on behalf of Friends of the Earth.

We would like to compliment the members of BLM study team who prepared the document who have performed well under extraordinary circumstances.

We would like to differ however, with the conclusion reached by the BLM that its EIS complies with the provisions and intent of the National Environmental Policy Act.

We believe the 1977 announcement of the Department of Interior that the consideration of the Lyndyl site would be "expedited" has essentially biased the entire NEPA review process, which is clearly reflected throughout the document. While we certainly support the conclusion that the project should not be built in the midst of the spectacular and wild southern Utah Badlands region, we believe there should be more to consider within the EIS process than just a search to dump the project somewhere else. 1

Throughout the entire review process since the announcement, the members of the study team, as well as all of the officials within the Department of Interior, and the general public, were all perfectly aware the only interest of the Department of Interior was to approve the project at the Lyndyl site without the benefit of any meaningful examination for the real need for the electrical power the plant would generate by an independent study or any serious consideration of alternatives which could also meet the projected demand for electrical power in the service areas.

Essentially, the Department of Interior has acted as its own Energy Mobilization Board, prior to any such authorizing legislation, in the case of the Intermountain Power Project and, as such, has clearly violated the provisions and the intent of NEPA by adopting this procedure. In addition, the "cozy relationship" which has developed between the Bureau of Land Management and the Utah State Government has effectively served to eliminate the participation and input of citizens concerned with this project and its impacts to the environment.

The alternatives section of the document is especially deficient. By separately enumerating in very brief terms the conservation and renewable energy resources options which could be utilized to meet the proponents expected electrical demands, the study obviously side-steps the fact that the combination of all of these factors could very well serve to create or produce the same amount of electrical power as could IPP at a greatly reduced cost to the economy and to the environment within the same time frame. 2

It is clearly obvious upon review of the document that no attempt was made to evaluate or even to consider the wealth of data and studies available regarding existing conservation practices and renewable resources technology which could be implemented to supply the same amount of electrical power the proponents proposed to produce by construction of the Intermountain Power Project. So, the real alternative to IPP, the "soft energy path" was missing in the document. 2

Friends of the Earth believes this alternative, the combination of conservation and renewable resources technology which could produce the same amount of power as IPP should receive equal consideration as a separate alternative to building the plant. In response to your request during my testimony at the public hearings in Salt Lake City, I am submitting as supportive evidence the enclosed two documents: 3

1. A copy of the Mid November issue of "Not Man Apart", Friends of the Earths periodical, which features an article by Amory B. Lovins entitled "Energy Strategy The Road Not Taken? which is excerpted from the book Soft Energy Paths, the principal treatise on the subject.

2. A copy of Friends of the Earth's recent book, SUN!, which should have been read by the members of the EIS team prior to their writing the deficient alternatives section, since this book tells the real story of the promise of the application of solar and other "soft" energy strategies which are currently available. 4

In addition, this book includes an annotated bibliography on the subject of solar energy and alternative energy strategies which could be extremely helpful in the re-writing of the deficient alternatives section of the document.

Friends of the Earth sincerely hopes these comments will be considered and utilized in the preparation of the final Environmental Impact Statement for the Intermountain Power Project.

Sincerely yours,

Gordon Anderson

Gordon Anderson
Colorado Plateau Representative
Friends of the Earth
Box 727, Moab, Utah 84532

9-76

19.1 Response: The need for power which would be generated by the Intermountain Power Project was verified in independent reviews of load forecasts by the California Energy Commission and the Utah Public Service Commission.

After identification of a potential fatal flaw in the Salt Wash site, the Federal and State governments (Interagency Task Force) initiated a study of 13 different potential plant sites for IPP. The public participated in and provided input to task force meetings.

Based on envfromental concerns at 11 of the sites, the Task Force recommended that the Lynndyl and Hanksville sites be considered as alternatives to the Salt Wash site.

Because air quality studies predicted that the Hanksville site would require a variance to meet air quality standards at Capitol Reef National Park, the Lynndyl site was chosen as the alternative to the Salt Wash site. In the draft ES, the Lynndyl site and ancillary facilities were then analyzed in accordance with NEPA to match to level-of-detail of analysis with that of Salt Wash.

Public review of the draft ES has also been carried out in accordance with NEPA procedure.

19.2 Response: The actual amount of electrical power needs that could be met by solar power conservation and other "soft energy path" alternatives has never been conclusively demonstrated and the technical engineering details of these methods are far from complete. They could not be implemented within the timeframe of IPP. For example, Sheldon Butt, President of Solar Energy Industries Association (Yulise, 1977), estimates that solar could provide only 4 percent of the nation's energy budget by 1990 and only 12 percent by 2025. According to Letter 26 in the FES, which was submitted by the Sierra Club, achieving most of our energy from soft technology is perhaps 50 years away.

19.3 Response: Alternative sources of energy are discussed in Transcript 20 Response 5. Energy conservation is discussed in Transcript 18 Comment 2.

19.4 Response: The copies of "Not Men Apart" and Sun were received and reviewed by the ES Team. The technology and philosophy discussed in these references has general applicability to persons who would like to adopt them. Conservation is presently discretionary for consumers of electricity and is not a viable alternative to Central Station generation. Use of solar power, wood, and other home energy sources would require social change and discretionary capital investment by home owners. This is also not enforceable in the IPP service areas. Legally, the electrical utilities must make a supply of electricity available to their customers.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
324 25th Street
Ogden, UT 84401

Mr. William G. Leavell
Associate State Director,
Bureau of Land Management
Room 1504, University Club Building
136 East South Temple
Salt Lake City, Utah 84111

20

Dear Bill:

As per our previous arrangement with Don Cain of your staff, we are providing comments relating to the Dixie National Forest portion of the Draft Environmental Statement (DES) for the Intermountain Power Project.

Also included are comments relative to the BLM's new alternative proposing the location of two 500 KV DC transmission lines across the Dixie rather than the one proposed in the DES.

DES - Salt Wash Proposal

This proposal would impact the Dixie National Forest by (1) a microwave repeater station on Barney Top and (2) seventeen miles of 230 KV transmission line on the Pine Valley Ranger District (West Corridor Alternative).

We believe the environmental effects of these impacts and possible mitigating measures are adequately described in the draft, and we have no comments; however, in our review we noted errors as follows:

1 Page 8-39 - Figure 8.14 describes the land use plan as Escalante. We think it should be Enterprise.

2 Page 8-22 - Figure 8.8 has a symbol error for the West Corridor Alternative for the Utah transmission system.

DES - Lyndyl Alternative Site

This proposal would impact the Dixie National Forest by (1) a microwave repeater on Big Mountain; (2) fourteen miles of 500 KV transmission line (a preferred and an alternate route are described), and (3) thirteen miles of 230 KV transmission line (an alternative route for this line is also described). Except as discussed below, we believe the environmental effect of these impacts and possible mitigating measures are adequately described in the DES.

Our comments on these impacts are as follows:

3 - The existing 138 KV New Castle-Bloomington power transmission line should share the same towers and right-of-way in common with IPP's 230 KV power transmission line wherever their routes are parallel. IPP would be responsible for a transmission corridor agreement between themselves and C.P. National Corporation, owners of the 138 KV line.

4 - Add or reword the following mitigating requirements in the DES, page 8.4-1:

> After construction, disturbed areas would be revegetated with plant species common to the site and planted in a pattern which would compliment the line, form, color, and texture of the site.
>
> Reword 'd' to include the following statement: Use helicopters or hand methods to construct pads, erect towers, and string conductors in areas . . . .

5 - On pages 8.3-37, 8.8-2, 8.8-8, and 8.8-50 of the DES there are references to a possible conflict with the Enterprise Land Use Plan if a designated utility corridor is not used. The DES should be reworded to delete reference to a conflict. The land use plan provides direction to establish a utility corridor following the existing 138 KV line but does not necessarily prohibit the location of utilities in other areas.

6 - The map on page 8.8-10 and the environmental profile are unclear and difficult to follow. Reference to a utility corridor in the Enterprise Land Use Plan should be revised according to the preceding statement.

7 - The map on page 8.8-46 and the environmental profile are unclear and difficult to follow. Corrections as noted before are needed under the headings, "Land Use Plans and Control," pages 8.8-49 and 50.

8 - In reference to the description of the Mountain Meadow Alternative Route, page 8.9-45, we want to suggest a variation in the route from that proposed by IPP. This variation would cross easier terrain and provide easier road access than that proposed. This

6200-11 (1/80)

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8 route would be for the 500 KV line to veer southwesterly at the 14 mile point rather than 11 mile point. This point of divergence would be approximately 1 1/2 miles west of Central, Utah.

- We noted errors on the following pages:

9 Page 8.1-8, the 230 KV line to St. George, Utah, is not shown on figure 8.1-5.

10 Page 8.1-28, the figure 8.1-11 erroneously describes an existing parallel transmission line to the 500 KV line in southwest Washington County, Utah.

11 Page 8.1-32, the titles for Big Mountain and Beaver Dam microwave sites appear to be reversed on figure 8.1-12.

12 Figure 8.2-C, in decribing the environmental setting of the transmission line between Lyndyl and Toquot Junction, the legend for cultural and paleontological resources is reversed.

The New Alternative

Our comments follow on the alternative presented to us by the Bureau of Land Management which involves routing both 500 KV transmission lines of the California system on the alternative route decribed in Volume II of the DES as the Mountain Meadow Route (page 8.8-45). The proposed 230 KV transmission line to St. George and the Big Mountain microwave repeater would remain as described in the preferred and alternative routes. In addition to the comments below, our above comments on the Lyndyl Alternative apply to this new alternative.

- After a brief review, personnel on the Dixie National Forest have not identified a "fatal flaw" to the verbal proposal presented by
13 BLM officials. However, we are not able to make other than general comments because of the limited time in which to make investigations and the lack of specific details on routes and tower locations.

- It is difficult for us to understand the reasons why, at this late date, the Nevada route for the one 500 KV power transmission line of the California system (line I) is in jeopardy for remaining as a viable proposal. It is our understanding that the previously
14 proposed Nevada route crosses an area for which the Fish and Wildlife Service has proposed wilderness establishment within the Desert Game Range. It is our further understanding that this area proposed for wilderness already contains an existing power transmission line and an abandoned asphalt surface highway. If our understandings are correct, the reasons for not routing a 500 KV line through the

14 Nevada area seem remote. We suggest that, rather than not routing a 500 KV line through Nevada, serious consideration be given to routing both 500 KV lines through the Desert Game Range.

- A double circuit 500 KV system would probably be preferable to two parallel 500 KV lines and towers. However, to make this determination, the Forest would need some type of photographic simulation of the two lines compared to one line. This process is described in item (e) on page 8.4-1 of the DES (Volume II).

- The proposed route of both large lines through Meadow Canyon could impact a large amount of private land within the Dixie National Forest. It is unrealistic for us to judge the reaction and wishes of the landowners, including Washington County officials, to such a massive intrusion on land values and esthetics. According to BLM officials, the local landowners and the County Commissioners have not been informed of this late proposal.

13 - Narrow canyons with steep slopes in the Meadow and Magotsu Creek areas will present difficulties in constructing the large towers required for a double circuit transmission line or in absorbing the impact of parallel towers for single circuit lines. Without specific knowlege of tower locations, the Dixie National Forest can only judge that the construction of roads to some tower sites would create unacceptable impacts. Helicopters and hand construction methods would thus be required for some tower locations.

- The Dixie National Forest has inadequate information on which to judge the impacts on humans, animals, and vegetation from the "Corona" of double circuit and of two single circuit lines of 500 KV size. The "Corona" effect on established electronic communications in this vicinity also needs to be determined.

On the basis of information we now have, the alternative location of both the 230 KV Utah Transmission System (described in the DES as the
15 Escalante Desert route) and the 500 KV California Transmission System (described as the Mountain Meadow route) would be our preferred alternative.

In conclusion, we wish to point out the seeming overlap of energy production and duplication of environmental impacts between this proposal of
16 IPP and the proposed Allen-Warner Power Project. It appears that a viable alternative for each proposal would be to describe how its power output could be increased or altered so as to eliminate the need for some facilities of the other company.

Comments relating to the Fishlake and Humboldt National Forests project features will be sent to you in the near future.

Sincerely,

VERN HAMRE
Regional Forester

20.1 Response: Comment noted; the word Escalante shown on Figure 8-14 (Vol. 2, Page 8-39) should be Enterprise. However, since this is a foldout profile, the profile will not be reprinted to correct a single typo error.

20.2 Response: Comment noted; the symbol legend is in error. The Bald Hills to St. George transmission line is a Utah Transmission System alternative not a Southern California Transmission System as shown. However, this map will not be reprinted to show this graphics change.

20.3 Response: Contact was made with a representative of the California Pacific National Corporation, owners of the existing 168-kV transmission line extending across the Oixie National Forest. He indicated that from an engineering standpoint, the suggestion to hand both the 168-kV line and IPP's proposed 230-kV transmission on the same towers was feasible.

He provided the following additional information:

(1) The entire system of towers and conductors must be replaced to accommodate the suggested double circuit system; (2) Reliability of the power transmission systems would be greatly reduced if two circuits were located on the same tower; (3) With reference to aesthetic intrusions, the power company indicated that visual resource values across this portion of the Dixie National Forest are low and private land values are not high; (4) Mixed ownership of power transmission systems often create internal problems with power companies when considering maintenance.

Reactions of a representative from IPP were essentially the same as those provided above. He also emphasized that the existing power transmission system must be removed to construct new, larger towers within current right-of-way, therefore, the existing 168-kV transmission line would need to be de-energized during periods of construction.

20.4 Response: Comment noted; revised pages (Vol. 1, Page 1-66; Vol. 2, Page 8.4-1, and 8.4-5) containing changes (underlined) included in Addendum.

20.5 Response: Comment noted; revised pages (Vol. 2, 8.3-38, 8.8-13, 8.8-49, and 8.8-50) containing changes (underlined) and showing deletions (arrows) included in Addendum.

20.6 Response: See Letter 20, Response 5.

20.7 Response: See Letter 20, Response 5.

20.8 Response: The suggested variation in the Mountain Meadow alternative route has been incorporated into the Western Utah Alternative in the FES in the Additional Information Section.

20.9 Response: Correction to Figure 8.1-5 has been made. The power transmission route is shown to terminate at the St. George Substation. Revised figure showing addition in Addendum.

20.10 Response: The stippling on Figure 8.1-11 which indicates existing transmission lines is incorrect. From the central part of Washington County to Toquop Junction should be deleted. However, no map change is made for this graphics error.

20.11 Response: Titles for Big Mountain and Beaver Dam microwave communication sites are reversed; however, this figure will not be reprinted to correct this graphics error.

20.12 Response: The legend for cultural and paleontological resources was reversed on all of the environmental profiles in Volume II. The bottom bar depicts the cultural resources while the significance of paleontological values is listed on the one above. The complex profiles will not be reprinted to correct graphics error.

20.13 Response: The data provided were considered in the analysis of the Western Utah Alternative in the FES in the Additional Information Section.

20.14 Response: Routing of two 500-kV lines through Nevada near the Desert Wildlife Range, to avoid impacts to the Oixie National Forest, has been considered in the FES under the Eastern Nevada Alternative in the Additional Information Section.

20.15 Response: The routing you prefer has been noted.

20.16 Response: IPP and the Allen-Warner Power Project would overlap in the routing of power transmission systems. However, the proponents of these projects are different and have separate service areas with independent power needs. The environmental advantages and technical feasibility of construction combining the generating capacity of IPP and the Allen-Warner Valley project into a single 5,500 MW plant are questionable.

NEVADA POWER COMPANY
FOURTH STREET AND STEWART AVENUE
P.O. BOX 230 • LAS VEGAS, NEVADA • 89151

August 30, 1979 21

District Manager
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

SUBJECT: Intermountain Power Project
Draft Environmental Impact Statement

Dear Sir:

Nevada Power Company does not object to the Intermountain Power Project and the two associated transmission lines which will carry electric power from Utah through Southern Nevada to California, provided that the transmission lines are not routed or constructed in such a way as to block or otherwise interfere with rights-of-way required for Nevada Power Company to service its customers in Southern Nevada.

1 Nevada Power Company has and will continue to work actively with the Los Angeles Department of Water and Power in defining transmission line routes from Southern Utah through Southern Nevada to California which will not interfere with this Company's obligations to serve its customers. However, we wish to point out that decisions by the Bureau on rerouting or restrictive stipulations imposed on the Intermountain Power Project could impact this Company's required transmission corridors. Thus this Company should be consulted prior to the Bureau's final decision on the Intermountain Power Project transmission lines.

2 Nevada Power Company has at this time rights-of-way applications before the Bureau of Land Management for two transmission lines from the Southern Utah area through Southern Nevada. In addition, an application for one slurry pipeline from Southern Utah into Southern Nevada as been filed. The Company requests that the Bureau consider these rights-of-way applications before reaching any decisions on the Intermountain Power Project.

Sincerely,

John W. Arlidge

John W. Arlidge
Manager, Special Projects

21.1 Response: BLM has offered to meet with representatives of Nevada Power Company during the week of November 5, 1979 to carry out the requested consultation.

21.2 Response: BLM is presently considering the Nevada Power Company applications in connection with the preparation of the Allen-Warner Valley Energy System Environmental Impact Statement. The NEPA process for IPP will be completed prior to that for Allen-Warner Valley. Schedules are such that the Secretary of the Interior and BLM decisions related to IPP will most likely be made in advance of those related to the Allen-Warner Valley rights-of-way applications. BLM will coordinate, as much as possible, any decisions which may jointly affect either the IPP or the Allen-Warner Valley project proposals.

4877 Eldorado Springs Rd.
Boulder, Colorado 80303
September 6, 1979

22

Donald L. Pendleton, District Mgr.
BLM- Richfield District
150 East 900 North
Richfield, Utah 84701

Dear Mr. Pendleton:

I favor the Lynndyl site for the proposed I.P.P. power plants. I think the most important thing to consider in the site choice (between Lynndyl and Salt Wash) is the air quality. South-central Utah has too much to lose in that regard. The uniqueness of its landforms, evidenced by the establishment of Arches, Canyonlands and Capitol Reef National Parks, Glen Canyon Nat'l. Recreation Area, and Phipps-Death Hollow, North Escalante Canyon

and The Gulch Outstanding Natural Areas (the latter Natural Areas currently being W. Wilderness Study Areas), makes this part of Utah a place in which the highest possible standards of air quality should be maintained. People come from all over the U.S. — indeed, the world — to see this special place (s.e. Utah) and expect to find the sparklingly clean air which is a famous accompanying characteristic.

Couple this with the obvious economic advantages of locating the power plant site nearest to destination for that power: Lynndyl becomes an obvious choice.

Yours truly,
Eleanor B. Taylor

22.1 Response: Your comments are noted. Air quality will be an important factor in the decision making process.

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ROCKY MOUNTAIN REGION
10455 EAST 25TH AVENUE
AURORA, COLORADO 80010

23

September 5, 1979

Mr. Donald L. Pendleton
District Manager
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

Dear Mr. Pendleton:

We have reviewed your draft environmental impact statement on the Intermountain Power Project Salt Wash and Lynndyl proposals and do not foresee any impact on aviation or its activities.

1 However, this review does not relieve the members of the Intermountain Power Project of the obligation to file Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration, as required by Federal Air Regulations, Part 77.

We also note that although the FAA has an advisory role to provide airport-related airspace determinations and airspace obstruction clearances on application from both public and private sources, such notifications or requests from private owners might not be transmitted
2 to the FAA in advance of the completion of planning or start of construction. Thus we advise that your future consultation with local planning authorities include the question of whether plans exist for the construction of private airstrips or other projects in the path of the proposed transmission lines.

Thank you for the opportunity to comment on the draft environmental impact statement for the proposed Intermountain Power Project.

Sincerely,

for Kenneth Thomasson
EDWARD G. TATUM
Chief, Planning Staff

23.1 Response: Comment noted; the forms will be filed under provisions of the Federal Air Regulatory Act, Part 77. Revised page (Vol. 1, Page 1-54) containing change (underlined) included in Addendum.

23.2 Response: Presently we have cleared several airstrips and are attempting to coordinate with local agencies for completion of this inventory. Consideration will be given to this factor before the right-of-way is granted.

32 High Street
Hackensack, New Jersey 07601
September 6, 1979

24

Mr. Donald L. Pendleton, District Manager
Bureau of Land Management Richfield District Office
150 East 900 North
Richfield, Utah 84701

Dear Mr. Pendleton:

Thank you for sending me a copy of the Intermountain Power Project Draft Environmental Statement. In my letter of August 18 to you requesting it I made a general comment about the Lynndyl site being preferable to the Salt Wash because of the proximity of national parks to the latter. After careful examination of the three volumes of the Environmental Statement, comparing the two sites and the effects on each area of the proposed project I am more convinced than ever that the Lynndyl site should be used, NOT Salt Wash, if this project is carried out, for the following reasons:

1. Less public land would be needed for rights-of-way (35,600 vs 37,500 acres).
2. Neither state nor federal Class I air quality standards for ground level concentration of sulfur dioxide and particulates would be exceeded at Salt Wash (they would be in Capitol Reef National Park and a 3-hour increment of sulphur dioxide also at Canyonlands National Park and Allen Canyon National Recreation Area at times).
3. Lesser amounts of heavy materials, concrete, asphalt, lumber, wood poles, steel, aluminum, coal, water, pipe needed for total project (site preparation, processing, manufacture of all of these items would be using time, resources, and energy that should not be wasted by unnecessary uses).
4. More time would be required but its effect would be equalized to and offset by the shorter distance it would have to be transported.
5. Practically no mobile homes would be needed vs. about 1300 units.
6. Though more land would be initially disturbed at plant site only 2653 acres would be irreversibly occupied vs. 4,610 acres at Salt Wash.
7. Though more than three times the amount of diesel fuel would be used on the R/W of the project, much less gasoline would be required.
8. Despite cutting down plant visibility at Salt Wash, scenic area would be spoiled whereas at Lynndyl there is not necessary to be massively cleared (slight reduced visibility would disappear after several years).
9. Equipment and supplies for building (and maintaining) Lynndyl would be available at the plant site as soon as the railroad spur is built, but at Salt Wash, a railhead site 70 miles away would be needed - a visual intrusion, as would the railroad crossing of Fremont Island I-70.

(Continued next page)

RE: Intermountain Power Project Location Proposal

10. No additional erosion is expected due to previous similar construction in the Lynndyl area, but localized erosions on approximately 5,710 acres at the Salt Wash site and on 45 miles crossed by the coal haul railroad could occur, plus more in the Salt Wash power transmission systems.
11. Less impacts from hunters and fishermen.
12. City parks acreage sufficient for new population, not for Salt Wash.
13. Unintegrated contrasts at Power Transmission Line Highway Crossings is much less for Lynndyl (25% vs. 60% at Salt Wash).
14. New town projects often fail, causing stress on county and state governments. Since local governments in the Salt Wash area have had little involved experience and resources, financing would be a difficult problem. Lynndyl would be covered by additional taps received from the plant.
15. Population increase with its added problems would be lesser percentage of present amount of residents at Lynndyl than at Salt Wash.
16. Because the increase in employment from the project would be less at Lynndyl there would be less of an impact in the future when the project ended.
17. Less need for additional schools, police and fire protection, and health care provisions at Lynndyl.
18. The above certainly outweigh the two big disadvantages of the Lynndyl site: need for a zoning variance and the removing of 7,250 to 7,760 acres of farmland from cultivation due to diverting water from agricultural to industrial uses, both of which could be overcome.

The Capitol Reef - Arches - Canyonlands National Parks are now becoming known and increasingly popular, a trend sure to continue. (Capitol Reef campground was filled early on Thursday evening, May 17 and Monday evening, May 21 - not week-end and not during peak summer travel). It would be a crime to put the Intermountain Power Project as close to this scenic area.

Sincerely yours,
Dorothy K. Gardiner
(Mrs. E.C. Gardiner)

24.1 Response: These factors will be considered in the decision making process.

Hinckley, Utah 84635
September 5, 1979

25

Mr. Donald L. Pendleton,
District Manager,
Bureau of Land Management
Box 768
Richfield, Utah 84701

Dear Mr. Pendleton:

I wish to comment on the Draft Environmental Statement for the Lynndyl Alternative Site of the Intermountain Power Project.

1 I feel that diverting the water for IPP from the DMAD Reservoir will be detrimental to the quality of the water used for irrigating in the DMAD area, especially so for the water that flows through the Gunnison Send Reservoir and is used by the Deseret Irrigation Company and the Abraham Irrigation Company.

2 As mentioned in the Draft Statement 8.2-28 "The quality in these reservoirs is sensitive to the mixing of Sevier Bridge Reservoir releases, Molen and Blue Spring discharges, pumping from deep wells, and return flows." The draft Statement also list the dissolved solid concentrations as 1,500 to 2,000 parts per million for Sevier Bridge releases, 400 p/m for spring water and 3,000 to 6,000 p/m for return flows. I have done considerable testing of these waters during the few years in an attempt to obtain better irrigation water for my farms. I have done all my testing by electrical conductance but I believe these parts per million figures correspond quite well with the work I have done. No figures are given in the Draft Statement on quality or the eight DMAD pump wells. My tests show the well water to be about 450 micromhos c/m Multiplied by.7 this would make the well water about 315 p/m. Thus the well water is far superior to the mix of the river water. Draft Statement 8.3-13 "Since approximately 21,000 acre-feet per year of water now diverted by the Central Utah Canal would be left in the Sevier River the river's total flow would increase." The addition of this water to the river would further 3 dilute the well water and result in lower quality for irrigating. Central Utah does not own any part of these wells. We were told at the 1977 Stockholder's meeting of the Deseret Irrigation Company that the DMAD companies have invested $650,000.00 in these wells up to December 31, 1976. The applications for these wells are for a total of 36,000 acre-feet per year for supplimental use, with a period of puaping March 1st to November 15th.

Thorpe Waddingham, our attorney, tells me that the State Engineer has ruled the improvement of water quality as a supplimental use.

The DMAD wells have been pumped quite heavily during the 1979 irrigation season and the quality of the water used has shown a marked improvement.

I realize there is a problem of poor quality return flow into the river between Leamington and Lynndyl gauging station but I do not think it as serious as do the River Commissioner and the local irrigation officers.

4 Draft Statement 8.2-28 "When water is diverted from the Sevier River to the Central Utah Canal and the Fool Creek Reservoirs, there is a significant increase in dissolved solids at Lynndyl. The increase occurs because spring water does not reach the Lynndyl gauging station and the river's total flow is return flow water." This is only significant during the non irrigation season when there is no release from Sevier Bridge Reservoir, and the entire stream is turned to Central Utah. The volume of water at the Lynndyl gauging station is very small when the river is turned to Central Utah. I figure the stream at 8 cfs. to 15 cfs. with an average of 11.25 cfs. for the four years 1974 to 1977. see appendix 1 (Sevier river near Lynndyl, appendix 2(USGS Sevier river near Lynndyl), appendix 3 (computation of water diversion below Sevier Bridge reservoir).

The draft Statement does not take into consideration the period of time the river at Lynndyl gauging station is entirely return flow. The graph on 8.3-22, figure 8.3-5 does not consider the size of the stream.

5 The releases from Sevier Bridge Reservoir usually end around September 1st. See appendix 13 (Sevier River near Juab). The make of the river below the Sevier Bridge Dam during the month of September is primary water and is not turned to Central Utah. See appendix 1 (Sevier River near Lynndyl). The first 9300 acre-foot make of the river below Sevier Bridge Dam is the "Gunnison Send right" and usuelly takes until around December 15th to satisfy. See appendix 4 (Higgins Decree), appendix 5 (9300 foot agreement), appendix 1 (sevier river near Lunndyl). The river is turned to Central Utah when the Gunnison Send right is satisfied and continues until March 1st. On March 1st it is again primary water and is turned down the river to DMAD. Thus I figure the average time of extremely poor quality water at Lynndyl gauging station for the years 1974 to 1977 at 83.75 days, with a stream averaging 11.25 cfs and testing about 3800 micromohos c/m. See appendix 3 (Coaputation of water diversion below Sevier Bridge Dam).

6 The Leamington Canyon water turned to Central Utah during the non irrigation season is mostly spring water and is good quality, I think about 1500 micromhos. It is stored in Fool Creek Reservoirs and later released into the river above DMAD Reservoir in exchange for water from Sevier Bridge (Draft Statement 8.2-24). I think this discharge from Fool Creek Reservoirs is about 1600 micromhos c/m. The Fool Creek discharge into the river for the years 1974 to 1977

9-85

averages 4467 acre-feet. See appendix 6 (Fool Creek reservoir outlet).

A mix of the extremely poor quality water at Lynndyl gauging station and the Fool Creek discharge to the river above DMAD should be about 2250 micronhos c/m. See appendix 3 (Computation of water diversion below Sevier Bridge Dam). This is approximately the same quality water as Sevier Bridge Reservoir water. See appendix 7 (USGS Sevier River near Juab).

If the Intermountain Power Project is built at the Lynndyl Alternative Site and uses Sevier Bridge water, there will be no Fool Creek discharge of water to the river.

Of even more importance to the water quality problem of the DMAD and Gunnison Bend reservoirs than the above mentioned dilution of well water is the disruption the diversion of IPP water from DMAD Reservoir would cause to the ability we now have to obtain especially high quality water in the fall months of the year for use by both the DMAD and Gunnison Bend Reservoirs, and also the possibility of filling the Gunnison Bend Reservoir with high quality water for winter storage. When there is no discharge from Sevier Bridge Reservoir, the Sevier River at Lynndyl gauging station, composed of the water from Kolen Springs, together with the general inflow of the river, and the low quality inflow between Leamington and the Lynndyl gauging station, tests approximately 1700 micronhos c/m. As mentioned previously, this flow into DMAD reservoir continues from the first part of September until the Gunnison Bend right is satisfied. Usually in December. The rights to this water are owned by the Deseret and Abraham Irrigation Companies. The practice in the past has been for the River Commissioner to turn the greater part of this water from DMAD into Canal A of the Delta and Melville Irrigation Companies for distribution through their canals. See appendix 1 (Sevier river near Lyndyl), appendix 8 (Sevier river near Delta), also "Annual reports of the Sevier river water distribution, "Canal A", prepared by the State Engineer's office. The make of the river below Sevier Bridge Dam is barely enough to take care of the calls for water by the Canal A Companies, with occasional releases to Gunnison Bend when it is needed for immediate use by the Deseret or Abraham Companies.

The practice in the past has usually been to not pump the DMAD wells during the fall months of the year, but in September 1977 the 2390 acre-foot flow of the river into DMAD Reservoir was not sufficient to supply water for irrigating and 1397 acre-feet of water was pumped from the DMAD wells. The improvment in water quality was dramatic. See appendix 1 (Sevier River near Lyndyl), appendix 9 (Wells), appendix 10 (Quality of water in DMAD reservoir and Canal A).

The addition of water into DMAD for IPP would make it impossible to obtain this high quality water during the fall months of the year.

It is a well known practice in the management of saline water use

that occasional leaching with high quality water is one of the better ways to control the build up of salts in the soil.

What concerns me most about losing the ability of obtaining this high quality water during the fall months of the year is the possible use of this water to overcome the problem of poor water in the Gunnison Bend Reservoir.

I do not agree with the Draft Statement B.2-28 "Both reservoirs are affected by the storage of poorer quality return flow water during the non irrigation season. Gunnison Bend exhibits a slightly poorer quality than DMAD Reservoir, because it functions as a drain for surrounding farmland when it is drawn down at the irrigation season's end." I do not think there is really a problem of poor quality in DMAD. True, there have been problems in the past but I think they were caused by the River Commissioner turning the Leamington Canyon water to Fool Creek before the Gunnison Bend right was satisfied. I also understand that in years past extra water has been turned to Fool Creek for storage. DMAD water for the last few years has been quite good in the spring of the year and has quickly turned to very good when the DMAD wells were started pumping March 1st. Irrigation use from DMAD does not ordinarily start until April 15th. Gunnison Bend Reservoir exhibits a MUCH POORER quality than DMAD Reservoir. See appendix 10 (Quality of water in DMAD Reservoir and Canal A) and appendix 12 (Quality of water in Gunnison Bend Reservoir and Deseret, Abraham Canals). I certainly agree with the portion of the Draft Statement which credits the cause of poor quality in Gunnison Bend to it's serving as a drain for Surrounding farmland when it is drawn down at the end of the irrigation season.

This year, 1979, we have had good quality water in both the DMAD and Gunnison Bend Reservoirs from the beginning of the irrigation season. This was accomplished by draining the Gunnison Bend Reservoir in February while it had a heavy cover of unmelted ice. This water was turned on down the river to Sevier Lake. The Gunnison Bend was then filled with good quality water from DMAD and the pump wells. The operation was successful but the Deseret and Abraham Companies were charged for the 1,200 acre-feet that was dumped. If it had not been for the heavy ice cover at the time of draining, the water loss would have been substantially increased.

The "Gunnison Bend Problem" is not entirely solved and I do not expect the Intermountain Power Project to be responsible for solving the problem. I do think, however, that in losing the ability to have extra good quality water in the fall months of the year we would be giving up our best and last chance of successfully solving this "Gunnison Bend Problem" and that we can not afford under any circumstance to do so--power plant or no power plant.

I have compiled lists of some of my water tests for the years 1974 through 1978 of DMAD, appendix 10 and Gunnison Bend Reservoir, appendix 12. I think these lists give a good idea of what kind

of water we have been using and what some of our problems are.

In as much as the Gunnison Bend Companies for the years 1974 to 1977 used 47 percent of the water entering the system with the Canal A companies using the other 53 percent, the availability of good quality water is important to the economy of the Delta area.

Very little work has been done locally on the Sodium Ratio of our water but I believe it could be very important. I understand that when the sodium in irrigating water exceeds the total of calcium and magnesium, the excess sodium does not leach out with drainage water and builds up in the soil, causing loss of permeability.

In August 1976 I sent a sample of water from Gunnison Bend Reservoir to the water laboratory of Southern Utah State University for analysis. I tested this water at 2550 micromhos c/m. The report from the laboratory on this water is appendix 11 and shows that the sodium content of the water sample was nearly twice the total calcium and Magnesium. The USGS reports, appendix 2 and appendix 7 include some sodium, magnesium and calcium data and some SAR data. this data seem to indicate that when the conductivity of the Sevier River water increases, the sodium absorption ratio becomes dangerously high.

Before constructing the DMAD Dam, the Gunnison Bend companies agreed to waive the right to use 700 acre-feet of their Gunnison Bend Right. (See appendix 5 (9300 Ft. agreement). I do not think Central Utah Water Company should be allowed to use this DMAD Reservoir as a diversion point for delivering their water to IPP without the restoration of the Gunnison Bend right to the full 10,000 acre-feet as granted in the Higgins Decree, appendix 4. Also some consideration should be made by Central Utah for the use of the DMAD Reservoir. This last paragraph does not in any way change my opinion on water quality problems caused by the use of DMAD as a diversion point for IPP water.

On April 9, 1979, I met with Mr. R. J. Clark and Mr. M F. Perez of the Intermountain Power Project to discuss my concerns about the project. Mr. Clark told me at that meeting that when he first came to the Delta area he considered the diversion of water for IPP in the Leamington vicinity and running it out to the project by gravity, thus saving the building of a pumping plant and the energy to power the pumps. I think this could be a possible alternative to the use of DMAD as a diversion point.

I have committed 442 acre-feet of water to IPP and am not opposed to the project. I hate to think of retiring producing crop land but we would be paid for it and I do not oppose it. I however am strongly opposed to lowering the quality of water remaining for agriculture,

used by those committing water to the project and by those who do not choose to sell any or their water.

I have prepared copies of some of my sources of information. They are enclosed with this letter as appendices one through thirteen. I hope they will help you verify my data and understand my position.

Very truly yours,

Wendell Shurtliff

Wendell Shurtliff
Box 51
Hinckley, Utah 84635

Note: Appendices are included in the original letter file.

25.1 through 8: Responses: Using data available, including that provided by your letter, an analysis was made of expected water quality changes by month caused by changing water mixes at the OMAD reservoir (see Tables 1 through 4). It was necessary to make several simplifying assumptions which may affect the actual numbers, but the trend is apparent. The tables illustrate the conclusion that changing the mix of the various water sources would result in a general improvement in water quality for all months except December through March, which would decline. The overall impact is of better quality water with significant improvements in the late summer and fall months. The actual change is sensitive to the actual operation procedures employed. Since OMAD is the major source to Gunnison Bend Reservoir, it is concluded that it would also experience an improved quality of water.

TABLE 1

Water Mix to OMAD Reservoir--PreProject
Figures in 1,000 Acre-Feet Except Where Stated

	Water Source					
	Wells	Fool Creek	Return Flows	Springs	Sevier River	Total
Total Dissolved Solids Avg. ppm.	315	1,750	4,500	400	1,750	
October	0	0	1.6	0.6	2.8	5.0
November	0	0	1.5	0.4	1.8	3.7
December	0	0	0	0.2	0.9	1.1
January	0	0	0	0.2	0.9	1.1
February	0	0	0	0.2	0.9	1.1
March	0	0	0	0.4	1.8	2.2
April	2.8	0	0	2.3	10.1	15.2
May	2.8	2.1	1.6	5.5	24.8	36.8
June	2.8	2.2	1.6	4.3	19.3	30.2
July	2.8	0.3	1.6	4.1	18.4	27.2
August	3.0		1.8	1.8	8.3	14.9
September	0		1.6	0.2	1.8	3.6
Total	14.2	4.6	11.3	20.2	91.8	142.1

TABLE 2

Estimated Water Quality of Inflow to OMAD Reservoir
Based on Above Water Mix Pre Project
Figures ppm Dissolved Solids

	Months											
O	N	D	J	F	M	A	M	J	J	A	S	Total
2470	2720	1510	1510	1510	1510	1290	1560	1570	1560	1630	2900	1810

TABLE 3

Water Mix to OMAD Reservoir--With Project
Figures in 1,000 Acre-feet

	Water Source					
	Wells	Fool Creek	Return Flows	Springs	Sevier River	Total
Total Dissolved Solids Aug. ppm.	315	1,750	4,500	400	1,750	
October	0	0	1.7	0.8	4.3	6.8
November	0	0	1.7	0.6	3.1	5.4
December	0	0	0	0.4	2.0	2.4
January	0	0	0	0.4	2.0	2.4
February	0	0	0	0.4	2.0	2.4
March	0	0	0	0.7	3.7	4.4
April	4.4	0	0	2.6	14.2	21.2
May	4.8	0	1.7	5.1	27.6	39.2
June	4.8	0	1.7	3.7	20.8	31.0
July	4.8	0	1.7	3.6	19.2	29.3
August	4.8	0	2.0	1.5	8.1	16.4
September	4.5	0	1.7	0.5	2.5	9.2
Total	28.1	0	12.2	20.3	109.5	170.1

TABLE 4

Estimated Water Quality of Inflow to OMAD Reservoir
Based on Above Water Mix--With Project
Figures ppm Dissolved Solids

	Months											
O	N	D	J	F	M	A	M	J	J	A	S	Total
2280	2470	1530	1530	1530	1540	1290	1520	1420	1510	1540	1480	1630

Intermountain Power Project
Draft Environmental Statement

Comments of Utah Chapter, Sierra Club
Prepared by James Catlin and Ruth Freer
8 September 1979

The Utah Chapter of the Sierra Club requests that these comments be considered in the Final Environmental Impact Statement for the Intermountain Power Project.

The Utah Chapter appreciates the Governor's Interagency Task Force on Power Plant Siting and its evaluation of this project. The task force defined the problem to siting a 3,000-MW power plant within Utah. The analysis of various sites was useful. Of the sites considered for this project, the Lynndyl site offers some advantages. It is hoped that this task force will be asked by the SLC on future power plant proposals to consider alternate sites and alternate methods of managing demand and generating energy.

If projected energy demand growth is as the project proponents claim, many other alternatives exist to meet all or portions of the demand. The ability to conserve energy by making more efficient end use was not seriously considered by the SLC or by the project proponents. Alternatives which include siting smaller generating facilities near the load were also not considered. Regulatory reform of utility rates and its impact on demand was not considered, nor were alternate energy sources such as coal gasification, industrial cogeneration, geothermal power, passive solar heating and cooling, active solar systems, low head hydro power, or biomass conversion. Nothing more than superficial token comments were made on such alternatives.

1

Volume III of the Draft Environmental Statement notes that "the need for IPP's generating capacity is based on the load forecast which each participant has prepared for its own system." The various participants in the project supplied plant capacity electricity consumption estimates. These use estimates are inadequate to determine the benefits from the project. Because the project will use public property (coal, water, land) and will impact an enormous portion of the state of Utah, it is essential to determine the benefits from this project and whether they really match the costs. Benefits would be the production of energy and the economic activity stimulated by that energy. There are many methods of delivering this end use energy; some have fewer costs than IPP at Lynndyl or Salt Wash.

2

3

Built within the plant capacities are assumptions of population growth and energy use for different tasks. It would appear that some of the demand used to justify this project would be caused by the primary and secondary growth if the project were built. The primary demand

growth would be the power consumed within the project components. The secondary power consumed by the construction of the project would include that consumed by IPP's employees and their families, by the services supporting the project and its employees, and by the growth of additional population and industry attracted to the area because the power would be available. The energy needs which would occur if the project were not built should also be shown in the final EIS.

3

Utilities transfer energy between regions and subunits within regions. The need to transfer this energy is dependent upon the occurrence of demand (at what time of day and year does the peak occur) and upon the time of day and year when the supply of one utility is in excess of its local demand. During recent hearings on a rate request by Utah Power and Light, the Public Service Commission reviewed an independent audit they had performed on UP&L and this practice of energy transfers. The PSC found that UP&L had been buying cheap hydroelectric power from the Northwest and selling their excess generating capacity to other regions. They had been pocketing the difference in electricity costs instead of passing them on to the consumer. The point here is that the supply of electricity needs to be determined in a manner which establishes which utilities have excess generating capacity during another utility's peak period. Specific peaking demand and supply information on all the utilities in the region is essential to determine the impact of load management alternatives. Peaking information is also needed to determine the ability of rate changes, including peaking charges, to change demand.

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Energy forecasts have been extrapolations of past energy use (IPP DES, 1976, p. 59). Even under stable economic conditions this method has many problems. It does not address the energy demand if certain changes occur in the assumptions underpinning the forecasts. If changes occur in the price of electricity relative to the consumer wage, if the government regulations supporting the energy monopoly alter, if other energy sources become more competitive, and if state and local policies limit electricity plant siting, the energy demand will be different. According to the IPP DES, UP&L estimates for electricity demand for the IPP project are allegedly are the same as displayed in the Energy 3 & 4 DES (pp. 1-52). According to this graph the energy demand forecast by UP&L will be an average annual increase of 4% from 1974 to 1986. According to the IPP DES (Vol. III, p. 79), the UP&L average annual demand increase from 1985 to 1995 will be 5.7%. There is no explanation of the sudden downward change in demand and what assumptions led to these forecasts. The only point that is clear is that the projected demand forecasts are wholely based upon the project proponents' and are likely more reflections of their corporate goals rather than environmental, economic, or public policy. A demand model must be developed which considers forecasts of energy and use (joules of heating, cooking, motive, lighting, etc.). This demand model should be calibrated to this region's characteristics and should realistically respond to changes in institutions, public policy, competition with other energy sources, and economics. The SLC should develop an independent energy needs estimate of rational

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energy development which minimizes the adverse impacts. At present the Utah Public Service Commission does not conduct independent energy forecasts when authorizing a Certificate of Convenience and Necessity. The EIS should place the highest priority on energy resource management to developing with the PSC independent information to evaluate the need for power projects.

Unequal analysis of alternatives makes comparison of the benefits and costs between them difficult. Several alternatives were not considered at all.

The Los Angeles Department of Water and Power has four power plant complexes using oil and gas. Many of these were put into service before 1950 and are nearing the end of their lives. The total face plate generating capacity of these now sited in California is 3,290MW. As these units reach the end of their useful lives, small coal-fired generation equipment could be installed as replacement to the oil and gas generators. Environmental standards would probably preclude using generators of the same size or same number on a single site, but much of the alleged electricity demand could come from such an installation. In addition to this, small coal-fired power plants could be sited near load centers instead of using a central site for such plants. There are advantages to this concept. It would use existing electricity transmission facilities, reducing the capital required for transmission investment and reducing the impact of the more than 1,000 miles of transmission lines planned in Utah, Nevada, and California. It would also make the load user provide water and deal with the many environmental consequences of the power demand which now would fall in distant areas. In addition, it would prevent unnecessarily rapid and damaging growth in Utah. The final EIS should fully consider the alternative of siting smaller coal-fired power plants near the load points. Special consideration should be given to replacing the oil and gas units with coal power plants of a scale to meet local environmental requirements.

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Perhaps the weakest part of the DES is the analysis of the feasibility of conservation to alter electricity demand. Serious inaccuracies exist in the brief description of the conservation alternatives (IPP DES, Vol. III, p. 26). This section of the DES mentions that the utilities are already participating in efforts to promote conservation. Unfortunately the list of utility conservation programs is only a small fraction of the potential programs available. None of the programs helps to develop economic incentives to make wise end use of energy. Following is a partial list of measures which, if undertaken, should lead to significant improvements in end use efficiency:

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1. Programs to encourage industrial cogeneration of energy. These systems are described as "total energy systems" by Wilson Clark in Energy for Survival (Anchor Books, 1974). The basic concept is that the waste heat from electric generation is used for heating within the industry and for the nearby homes. The Sierra Club urges tax credits

to encourage this form of energy supply.

2. Utility rate reform.
There are many forms of this but most offer financial incentives to maintain the same energy use or to decrease energy use. Other forms require the consumer re-vesting the electricity use which would require new generating facilities to pay for the additional plants needed instead of spreading the new plant cost over all consumers. Having the investors pay for capital improvement instead of the consumer through "work in progress payments."

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3. Building energy conservation programs.
Utah has not adopted building efficiency guidelines which offer the energy conservation potential that standards like those in parts of California offer. The Conservation Foundation estimates that 20%-40% of energy consumed in buildings could be saved by an improved building code.

4. Public information.
The greatest area of activity of the utilities is in this area but much more could be done. The utility and state could produce public information which would reach every home. The utility could, for example, produce a buyer's guide to appliances, air conditioning equipment, and heating equipment. The guide should include not just electricity but also gas and solar systems; it should also stress life cycle costs and energy efficiency of each brand of energy device.

5. Utility investment in home conservation projects.
One alternative to home conservation is to allow the utility to invest in home insulation and other conservation measures and to add that to the consumer's rate base.

The final EIS should consider the demand for electricity which would be reduced by each of the above methods. The best combination of energy conservation methods should be evaluated, not just isolated methods.

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At the scoping meeting for the Allen-Warner Valley Energy System, the Environmental Defense Fund outlined an energy alternative which would meet the projected energy production of the proponents' forecasts. "Based on extensive experience, EDF believes that a combination of conservation and alternative energy sources can obviate the need to construct the AWV system; and because this combination is safer and cheaper it should be the BLM's preferred alternative" (comments by EDF's David Hastbaum). The BLM should give the highest consideration to this alternative and to the report entitled "Testimony before the California Public Utilities Commission--Alternative Energy Systems for Pacific Gas & Electric Company; an Economic Analysis" by Dr. [illegible] Willey, 1978. Details of the method of implementing the EDF conservation alternative

lie in this report.

The concepts of the SFE alternative are also explained in these books authored by Amory Lovins: Soft Energy Paths: Toward a Durable Peace, Harper Colophon Books, 1977; The Energy Controversy, edited by Hugh Nash, Friends of the Earth, 1979; World Energy Strategies, Friends of the Earth, 1975. The soft energy path involves two periods, the first of which is a transition period in which conventional technologies are merged with conservation methods. During the transition phase the soft technologies are developed. Soft technologies are defined in Soft Energy Paths by five characteristics:

1) They rely on renewable energy flows that are always there whether we use them or not, such as sun and wind and vegetation on energy income, not on depletable energy capital.
2) They are diverse, so that as a national treasury runs on many small tax contributions, so national energy supply is an aggregate of very many individually modest contributions, each designed for maximum effectiveness in particular circumstances.
3) They are flexible and relatively low technology--which does not mean unsophisticated, but rather, easy to understand and use without esoteric skills, accessible rather than arcane.
4) They are matched in scale and in geographic distribution to end use needs, taking advantage of the free distributions of most natural energy flows.
5) They are matched in energy quality to end-use needs.

Achieving most of our energy from soft technologies is perhaps fifty years off. There are transition technologies which should be pursued when considering this power project. They include conservation, co-generating electricity from existing industrial steam and the use of waste heat for district heating, biomass alcohol (not for electricity but for the tasks electricity performs, such as transportation), and sophisticated use of coal. Perhaps the most interesting development in coal combustion is the fluidized bed system. Stal-Laval Turbin AB of Sweden now has off-the-shelf 70-megawatt gas turbines powered by fluidized bed combusters. Together with the district-heating networks and heat pumps, in 1977 eight of these plants would produce more heat than $1 billion coal gasification plant. It would use 2/5 as much coal, cost half as much to build, and burn more cleanly than a normal power station with modern scrubbers. Such alternatives mentioned in Lovins' work should be considered fully in the final EIS. The soft path considers the long-term directions now being developed ad hoc. The final EIS should detail the long-range commitments in terms of additional energy and use needs and how, with their proposed alternative, this commits us to additional power plants. The FEIS should also outline the feasibility to site the amount of generating capacity likely to be requested in coming years. While specific sites will not be mentioned, the general broad impacts, not mentioned in the programmatic environmental statements, should be addressed. In considering potential future

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allocation of water, how many power plants could be sited in this western region? With our present air quality involvement and in view of the air quality requirements, how many energy systems can be sited in the western US? Governor Matheson has adopted a policy on the wilderness issue. He argues that the entire wilderness proposal for all agencies should be reviewed at once to see the net impact of such a designation. No less important is looking at the total long-range energy development picture for Utah. The programmatic studies to do this; the final EIS must, in order to meet the requirements of NEPA.

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The following comments are specific to each of the two alternative sites for the Intermountain Power Project.

Salt Wash

The impacts of siting a 3,000-megawatt generating station in an area surrounded by national parks and de facto wilderness areas are immense. The new town to be constructed in a county which is predominantly agricultural would cause serious changes in the community values and not be congruent with the present residents. It is not clear that the revenue from the power project would offset the need for a hospital, a new high school, and a large increase in police and other services. Emery County crime increased from 900 reported crimes in 1974 to 2855 crimes in 1977. During the same period the population increased from 6,700 to 8,200. The population increase would be more significant in Wayne County. Measures to combat the crime problem have been insufficient in the past. The FEIS should identify revenue for social services, the needed level of expenditure, and estimate whether there would be a shortfall.

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The project would most influence the lives of local residents through impacts on water for agricultural and municipal use. The Emery 3 & 4 environmental statement inadequately stated the impacts of salt accumulation on farm lands. By reducing the annual flow of the Fremont River by 3/5 it is likely that additional salting would occur. The complete diversion of the Fremont River with releases upon demand raises the question of minimum stream flows. No consideration has been given to the impacts to wildlife and riparian habitat if the river is dewatered for long periods. No impacts are stated for the effect on the Dirty Devil River and the associated habitat. The final EIS must include these effects. Mitigating measures should include provisions to insure minimum stream flows to maintain wildlife populations and their habitat at their present levels. These should be included in the FEIS.

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The mining of ground water in the Salt Wash alternative could have more significant adverse impacts than those mentioned in the DEIS. Most of the proposed wells are next to Capitol Reef National Park and may affect both surface and subsurface water in the Park. The draft EIS mentions that 24 springs may be impacted by the well draw. The eastern half of Wayne County is projected to see water levels decline more than 100 feet over the 35-year life of the project. Water table levels would

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drop more than 350-500 feet at 18 wells less than two miles from Capitol Reef.(IPP DES, Vol. 1, Fig. 3-1). Much of the southwestern corner of Emery County would see water table drops of more than 100 feet. While these water table drops are predicted in the Navajo sandstone formation, it is not clear how this would impact water near the surface. The 24 springs mentioned as probably being impacted cover a wide area and offer the only water for wildlife for large portions of the year. Even changes in a few would cause significant adverse impacts on wildlife. Mitigating measures should insure that mining of underground water would halt when surface springs important for wildlife would be impacted.

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Air quality within this area is of national importance. While it may be possible to meet the standards necessary to protect health, significant deterioration of air quality would occur. In some of the better air quality work done on this project to date, W.S. Cramer forecasts that the Class I standards pertaining to prevention of significant deterioration would be violated in Capitol Reef National Park and Canyonlands National Park. This is unacceptable. At the Salt Wash site significant deterioration of visibility would occur. The Westinghouse analysis concludes that small reductions in visibility would occur. It would appear that their modelling does not adequately measure the visibility changes which would occur. The selection of visibility observation sites was above the stack height and of equal level. This level would be above the inversion level during worst-case conditions mentioned in the air quality analysis segment of the DES. The viewer more than likely would observe these vistas from a location beneath the mixing layer and this would mean viewing vistas through increased concentrations of pollutants. Visibility estimates must consider more than the narrow best-case conditions. Significant visibility reductions are now occurring from existing power plants. The concentrations of these additional sources should be included in making visibility measurements. Particulate pollution generated from secondary vehicle use on dirt roads should also be added to the visibility model when predicting visibility changes. Personal experience indicated that the visibility changes mentioned in the DES have already occurred due to the present power plants. The pollution stain from these plants carries a unique color which can be differentiated from natural factors affecting visibility.

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Present visibility modelling lacks the necessary sophistication to represent the physics involved. Present models fail to address adequately the size distribution of particles, directionality of the viewer and the sun, spectral shifts from different pollutants, sulfur particle formation, and the hydroscopic effects that can occur. At present the efforts have little real meaning in explaining the perceived visibility changes from this project.

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The draft ES discussion of the Salt wash site and the Lymndyl site fails to use worst-case analysis based upon the real range of coal analysis in the region from which the coal is likely to be taken. The DES (Vol. I, p. 1-30) outlines the estimated plant emissions using certain sulfur and ash content of coal. .7% sulfur content was chosen as worst case. The Draft Environmental Statement for Development of Coal Resources in Central

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Utah (Part I, II-11) indicated that sulfur content and ash content could be much higher if taken from the Wasatch Plateau, the Book Cliffs, and the Emery coal mining areas. Sulfur content as high as 4.6% is indicated for Emery. The figure of .99 is the average sulfur content for the same area.

At present there is no mechanism to insure that the proponents will use only coal with a sulfur content below that used to model air quality. The analysis must use the worst case sulfur content values and ash values. Even with the low sulfur content figure, the air quality analysis still indicates violations of the Class I air quality regions in two national parks.

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Several additional problems exist with the Salt Wash air quality analysis as well as with the Lymndyl site. These include discussion of the variation of pollution estimates that the model allows. All the data and analysis techniques have margins for error. The range of probable pollution estimates should be specific. There needs to be analysis of the long-range transportation of air pollutants. This analysis should include other emitters, including secondary development within the air shed. No mention is made on how much of the PSD increment remains after the project is completed. The FES should detail what kind of further development would be allowed within the impacted area and where this development would be allowed. Further details need to be explained on the measures to control particulate coal on rail trains and on storage piles.

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It is totally irresponsible that there is no mitigation for CAV damage in this region. The introduction of the large number of people, with the expected number of off-road vehicles, would create a greater impact than in the West Desert. The possibilities for mitigation are discussed in our comments on the Lymndyl site. The final ES must detail mitigating measures which would prevent, as mandated by the two presidential executive orders on CAVs, damage to the public resources.

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Lymndyl site

As mentioned in the Salt Wash site comments, the worst-case ash and sulfur content was not adequate. The DES uses what are now likely average sulfur and ash content figures. The final ES should include air quality based on the worst case coal that would be burned. The issue of particulates is not adequately covered. The DES mentions that the particulate measurements taken as background levels are not valid. Valid measurements should be taken before any PSD permit is applied or. Three additional sources of particulates were not considered in making the estimates for the Lymndyl site. The first is the cement plant planned for Juab County This plant may produce up to 1,000 tons of cement per day. Martin Marietta is to announce its intentions at the end of this month. These types of plants tend to primarily produce particulate pollution. Fugitive dust from storage piles appears not to have been considered in

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the particulate emission estimates. Secondary particulate emissions, including vehicle activity, were also not considered. The modeling of particulates needs to include particulates which are developed in the air after emission. This is discussed in "Evolution of Particles in the Plumes of Coal-fired Power Plants: Deductions from Field Measurements" by Peter V. Hobbs in Atmospheric Environment, v. 12, pp. 935-951. This particle mechanism may contribute significantly to the net particulate concentration under worst case conditions. If all these additional factors are included in the particulate pollution estimates, the PSD requirement may not be met. Careful analysis needs to be done and this included in the DES. Apparently no analysis has been done on the impact of this project at Lynndyl on the nonattainment areas. Long-range transport modelling should be done and the effect to the non-attainment areas discussed in the final ES.

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The DES mentions only briefly the fact that there will be OHV damage in the area if the project is built. The possible adverse effects of the large number of off-road vehicles brought into the area are numerous and serious. The destruction of archaeological resources, soils, vegetation, and wildlife habitat, the increased noise and air pollution could have a devastating effect on the environment. These must be stipulations on combbal of OHV activity in the area, and this and other mitigating measures must be included in the final ES.

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The Sierra Club is concerned about the use of a significant amount of agricultural water for industrial use in the area. The transfer of 44,700 acre-feet annually of irrigation water would have a substantial impact on the lifestyle and agricultural production of the area. The figures on loss of crop production shown in Table 8,3-10 are significant, as is the net loss of agricultural income of $778,000 to $961,000. It is our understanding that a considerable number of residents in the Lynndyl-Delta area are opposed to the IPP plan largely because of its effect on the agricultural lifestyle of the area; it is hoped that these people will have adequate input into the planning process.

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The changes in the Sevier River's flow pattern, reduction in surface water supply and ground water, and reduction of seepage and drainage flows would have a substantial impact on the wildlife and wetland vegetation of the area. The DES notes that there is not enough information to assess wildlife population reductions as a result of the project. Such information should be developed. Mitigating measures should insure that waterfowl, marsh birds, wildlife, wetland habitat, and vegetation are protected.

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It still is not clear that a 3,000-megawatt capacity plant is necessary. There seems to be no consideration at all of a smaller capacity plant; the options are apparently 3,000-MW or nothing. Consideration should be given to smaller plant size.

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26.1 Response: Transcript 18 Response 2 addresses conservation, authority of the utilities, and rate restructuring. A number of the participants in IPP are pursuing projects in or near their load centers, in addition to IPP. A number of these alternate energy sources are viable; however, it does not appear that these kinds of energy sources can be developed to the extent necessary to meet the objectives (see Energy Alternatives: A Comparative Analysis, CEQ, 1975). As noted in this letter, "Achieving most of our energy from soft technologies is perhaps 50 years off," which is not compatible with the timeframe for this project. The participant's load forecasts indicate need for additional baseload capacity in the 1980s. Lovins work represents one perspective. A different perspective can be found in Soft vs. Hard Energy Paths, published by Charles Yulish Associates, Inc.

Siting a number of plants near the load centers would likely require a larger commitment of resources for rights-of-way, water, and other resources. Some of the load centers are non-attainment areas, and may not be viable for siting power plants.

Engineers differ in their opinions on the siting of several smaller coal-fired power plants rather than one larger unit. For example, the Public Service Company of New Mexico (PNM) views do not agree with a study at the Los Alamos Scientific Laboratory which suggests that six 500 MW power plants should be constructed in southern Utah rather than one (PNM News Release).

An engineer of PNM said, ". . .Certainly 1979 aesthetics impacts of six plants (even if they are smaller) would be considered greater than the aesthetic impacts of one plant." Another concern of these representing PNM is "Avoiding critical habitat for rare and endangered plants and animals species is almost always difficult. Given six plants to site instead of one, the problems are six times as bad." (PNM New Release, 1979).

In order to avoid redundancy in power plant environmental statements, it is the policy of the Department of Interior to present only short discussions on alternative energy sources. A complete discussion of alternative energy sources can be found in "Energy Alternatives: A Comparative Analysis," which was prepared for the Council on Environmental Quality and several other governmental agencies by the University of Oklahoma (1975).

26.2 Response: The need for capacity is based on the participant's forecast, as noted in this comment. However, these forecasts are also independently reviewed by the California Energy Commission or the Utah Public Service Commission, which have indicated general concurrence with these projections. Additional needs analysis does not appear to be warranted.

26.3 Response: The energy demands and forecasts of the participants are made on the basis of established forecast methodologies. Response plans are then developed to meet the projected load growth and reserve margin requirements for the participants in the project. In essence, the energy needs which are projected to occur are independent of any particular resources that exist or are being planned by the participants. Vol. 3, Page 30, "No Action," also addresses possible impacts to the participating utilities if the project was not developed. The energy needs to support the increased population related to IPP in either the Salt Wash or Lynndyl area would not be available if the project were not constructed.

26.4 Response: IPP would be used to provide base load energy and is not designed to respond to the peak demands of the participants. Detailed information on peak demand and resource schedules is a matter of public record. Load management essentially reduces the peak downward, but does not necessarily reduce the need for energy. It primarily attempts to levelize the energy need during a particular time period.

A number of the utilities in IPP are actively involved with the transfer of energy between regions. For example, the southern California participants, except for Anaheim and Riverside, are interconnected with utilities in the Pacific Northwest, northern California, and the Southwest. Energy is continually being exchanged or sold between all of these areas. Many of these arrangements are essentially short-term and cannot be considered as firm energy resources for base load over the long term.

There are two additional studies underway which may also facilitate the utilities within the regions to transfer energy. One study is directed at examining the feasibility of upgrading the Pacific Northwest-Southwest d.c. intertie to increase the capacity of that transmission system. The "California Utilities Increased Integration Study" is examining the advantages of power pooling among the major utilities in California. This study is expected to be completed this year.

Specific data concerning peaking demand and supply information for each participant are available from the California PUC and the Utah PUC.

26.5 Response: Energy forecasts are discussed Letter 26 Response 2. As noted in the comment, energy forecasts are estimates, and are subject to change. The utilities periodically review their forecasts, and make adjustments in accordance with the factors mentioned in the comment, as well as others.

26.6 Response: Siting of plants is discussed in Letter 26 Response 1. The applicant has indicated that the four existing power plants of the Los Angeles Department of Water and Power are located in an air basin which does not meet the primary National Ambient Air Quality Standards for all the criteria polluants except for SO_2. Therefore, it is probably not feasible to convert these plants to compatable size coal-burning facilites. As discussed in Letter 26, Comment 3, the energy needs are independent of the energy resources. Therefore, converting these four plants to smaller-size generating units would require that additional resources still be available or developed to meet the projected energy demands.

26.7 Response: Cogeneration is discussed in Letter 17 Response 6.

26.8 Response: Alternative sources of energy are discussed in Transcript 20 Response 5. Energy conservation is discussed in Transcript 18 Response 2.

26.9 Response: Soft energy is discussed in Letter 26 Response 1. Also, see Transcript 20 Response 5.

26.10 Response: This environmental statement is a site-specific analysis, and is not intended to be a programmatic statement. A discussion on the interrelationships among other coal-fired power plants within a regional setting has been provided in Vol. 1, Pages 1-67 through 1-75.

26.11 Response: Letter 8 Response 3 discusses availability of front-end revenue from IPP.

26.12 Response: The dewatering of the Fremont River was considered in Vol. 1, Page 3-23, second paragraph. The Fremont River may never be totally dewatered because of seeps and overflow of the dam, but if it is, it would be during the winter months when wildlife needs for water are less. No mitigating measures for augmenting stream flow have been proposed because of low fishery value. Letter 12 Response 7 has additional information.

26.13 Response: Studies do draw the conclusion that springs and seeps originating in the Navajo Sandstone would be affected by the proposed project. However, the data do not indicate that springs and seeps inside Capitol Reef National Park would be involved as the ground water level is far below the ground surface at these locations.

Mitigation measures do require that any springs adversely impacted would be replaced (See Vol. 1, Chapter 4).

26.14 Response: The work done by Westinghouse was done prior to the Clean Air Act Amendments of 1977 and at a time when no guidance on visibility modeling was available. The state of the art in visibility modeling advanced since Westinghouse's efforts, although no formal procedures have been adopted by EPA. If a PSD permit is applied for to EPA for the Salt Wash site, further visibility modeling would be done to reflect state of the art advancements.

The state of the art in visibility modeling of an individual source is limited at this time. The modeling of cumulative effects from more than one source is beyond the present state of the art.

26.15 Response: The PSD Regulations excluded from air quality impact analysis those fugitive dusts which are native soils uncontaminated by pollutants. At present, there are no accepted modeling techniques which address the impacts of road dust on visibility.

26.16 Response: As pointed out in the DES, the visibility modeling was done with existing guidance from EPA. The techniques used to assess the visibility impacts of the proposed project are representative of the current state-of-art in visibility modeling and yield results for a specific calculation that are comparable to the results obtained by similar models independently developed by others.

26.17 Response: The coal quality addressed in the "Final Environmental Statement for Development of Coal Resources in Central Utah" ranges from a sulfur content of 0.23 to 4.66 percent and an ash content of 1.4 to 23.6 percent over all the coal fields. However, coal for the IPP project would come from selected areas of the field with a range in sulfur content of 0.3-1.0 percent and a range in ash content of 4.4 to 13.0 percent (Vol. 2, 8.1-15), with the average coal around 0.6 percent sulfur and 8.8 percent ash. IPP took the average coal quality from these selected fields and estimated worst-grade coal by reducing the coal Btu content by 15 percent, increasig the sulfur content by 30 percent, and increasing the ash content by 15 percent. Based on these coal qualities, emission rates were arrived at and submitted to EPA. Regardless of the actual coal quality burned at the plant, the PSD permit (if issued by EPA) and the construction permit (if issued by Utah Bureau of Air Quality) would be based on these emissions and by law must not be exceeded by IPP.

26.18 Response: If EPA issues a PSD permit for IPP, the permit would be issued on an emission rate, not a percent sulfur rate. The source must meet this emission rate by whatever means possible.

Violations of Class I areas from the Salt Wash site are identified in the Air Quality Section of the DES.

26.19 Response: Worst-case meteorological conditions and worst-case coal quality were used to assure protection of the short-term air quality standards and increments.

Long-range transport of air pollution is discussed in Vol. 1, pages 3-9 to 3-10.

Since EPA has not received any other PSD permit applications in the area of IPP, the plant would be the only source to use any of the increments at this time. A cement plant planned near Leamington, Utah would have to file a PSD permit application with EPA. The impact from this cement plant would have to fall within the PSD increments along with IPP.

The control of particulates in coal handling and storage would be done by IPP in compliance with BACT. The impacts of particulate emissions from coal transportation systems (locomotive and open coal car) have not been estimated by EPA or the State of Utah Bureau of Air Quality. However, these emissions are very short term (on the average, approximately less than 10 minutes). When compared to the 24-hour and annual National Ambient Air Quality Standards for particulate matter, these transportation emissions would not be expected to have a significant impact.

Regulation of secondary development within the airshed may come under the jurisdiction of the Federal Government, State of Utah, and/or the affected county. If further development is planned, additional analysis may have to be performed by the agency having jurisdiction.

26.20 Response: Transcript 17, Comment 1 discusses ORV use.

26.21 Response: Worst-case coal quality was estimated by IPP as discussed in Letter 26 Comment 17.

The State of Utah Bureau of Air Quality has established a monitoring location at Sugarville to establish background particulate matter, SO_2 and NO_2 concentrations.

The three additional sources of air pollution mentioned will have to use BACT controls on their particulate emissions. The Utah Air Quality Bureau received notice from Martin Maicelta on the Leamington Plant in Millard County on 8-21-79, the Monrock proposal in Juab County on 7-12-79, and the Beehive Cement Plant in Utah County on 6-27-79. The Air Quality Bureau has still not received details on their plants. BLM discussions with the Air Quality Bureau identify possible sources in the area that could interact with IPP preceded the application dates and did not identify these sources. These plants must meet BACT and be analyzed by the State Air Quality Bureau and EPA to conform with all PSD and non-attainment regulations.

Particulate emissions from storage piles would be limited by measures proposed by IPP (Vol. 1, Page 1-31). Secondary particulate emissions from vehicle activity would be minimized by the paving of the primary and secondary access roads to the plants as proposed by IPP. Development of particles in the air after emission (e.g., SO_2 to sulfate conversion) is very slow when compared to atmospheric dispersion effects. However, the plant emissions would be well below the PSD increments and NAAQS for particulate matter so that even if the concentration estimates for particulate matter were doubled to represent gas to particle formation (an overestimation), the PSD increments and NAAQS would still be met at the Lynndyl site.

Long-range transport of air pollution is discussed in Vol. 1, pages 3-9 to 3-10.

The impact of the Lynndyl plant on the nearest nonattainment area (Tooele) is analyzed in Vol. 2, 8.3-2 through 8.3-9. Although this only addresses SO_2, the impacts on particulate concentrations in nonattainment areas would not be significant since the particulate emissions from the plant are approximately 12 percent of the SO_2 emissions.

26.22 Response: Transcript 17 Comment 1 discusses ORV use.

26.23 Response: Local residents and planning organizations have had input in the project through public hearings and written comments. Their comments will be considered in the decision-making process.

26.24 Response: The impacts of the proposed project were analyzed using available data. Taken as a worst case situation, the project would remove approximately 9 percent of the existing return irrigation water flow to the wetland habitat (riparian) of the impact area. This would cause an adverse impact to the wildlife dependent upon these riparian areas. However, the available data prevent a quantification of the loss of numbers of animals. For the most part, the impact would not approach "substantial" and the mitigating measures would protect waterfowl, marsh birds, wildlife, wetland habitat, and other vegetation. Letter 13 and Transcript 11 provide additional information on water use.

26.25 Response: Need for the project is discussed in Letter 26 Responses 1 and 2.

WALTER A. KLINGER
2819 S. Melbourne Street
Salt Lake City, Utah 84106

Donald Cain
U.S. Bureau of Land Management
136 E. South Temple Street
Salt Lake City, Utah 84111

Dear Mr. Cain,

By means of this letter I am formally submitting comments on the IPP EIS. I have discussed my critique of the EIS with Jim Catlin of the Utah chapter of the Sierra Club, who intended to submit the comments to your office himself. He is unable to do so however due to his involvement in a severe accident. It is therefore appropriate that you should consider his concurrence with my statement.

The focus of my comments is the air quality impacts at the Lyndyl alternative site. My qualification for making such comments may be discerned from the enclosed resume. I hope you will find my statements to be of value in future evaluation of the project. I would appreciate a formal response from your office to the issues and questions addressed in the statement.

Sincerely yours,

W.A. Klinger

enclosures

WAK/jm

9-96

GENERAL SUMMARY

The following is a summary of the issues related to air pollution impacts discussed in these comments.

(1) Unknown coal source: leads to uncertainties about sulfur and ash content of coal.

(2) Modeling errors: results from: uncertainties in coal data, omission of fugitive particulate emissions, improper selection of worst case meteorology, inability of model to handle worst case conditions.

(3) Visibility impacts: complex problem is treated in oversimplified way.

(4) Climatological effects: a need to assess impact on precipitation and insolation from particulate emissions.

(5) Ultimate fate: a need to assess long term impact of release of all pollutants and trace elements.

(6) Environmental monitoring: background studies needed and details of air monitoring should be specified to meet federal regulations.

COAL SUPPLY

The uncertain origin of the coal to be used at IPP (IPP V.11, p.8.1-15) is of concern with respect to the sulfur, ash and trace element content. The concentrations and distribution of these constituents in coal is highly variable, even within short distances in the same coal seam. Therefore an adequate margin for composition variability must be used in the development of plant emission data. If Utah coal is used it is recommended that a sulfur content of 1.2 per cent and an ash content of 13 per cent be used in worst case modeling. Doelling (1972), in his monographs on Utah coal fields, reported average values of sulfur content ranged from .60 percent at the Sego field to 1.6 per cent at the Vernal field. The average ash content ranged from 4.4 to 12.5 per cent at the Coalville and Vernal fields, respectively.

If coals from Wyoming or other states are to be used, it is essential to know their average composition of sulfur and ash also. Otherwise errors in plant emission calculations will result and forecasts of air pollution impact will become uncertain.

AIR POLLUTION MODELING

As noted in the previous section, plant emission rates need to be based on worst case coal constituents' composition, with a margin for error. The uncertainties in coal data must be eliminated for meaningful air pollution modeling to be achieved.

The particulate emissions modeled did not include fugitive plant sources, such as coal transport, handling and storage, ash disposal, and vehicle traffic to and from the plant. Under frontal passage conditions, fugitive plant emissions can be expected to contribute significantly to violations of the particulate National Ambient Air Quality Standard (NAAQS). No consideration was given to gas-to-particle conversion processes that take place with downwind travel of the plume. In a recent paper by Hobbs et al. (1979), the gas-to-particle conversion rate at the Four Corners Power Plant was found to be on the order of a few per cent sulfur dioxide per hour. If the same type of conversion phenomena occurs at the IPP Lynndyl site, ground level particulate concentrations may be increased by up to 10 per cent under worst case conditions.

The worst case meteorological data selected for the 24 hour impact in the vicinity of the plant is 22-23 June 1950 (IPP V.III, p.233). It is unclear why this time period was selected as the worst case. Normally the worst case air pollution periods in Utah are associated with winter time conditions, when high pressure systems and associated low wind speeds, high static stability and shallow mixing layers, severely restrict the diffusion of pollutants. When the Great Basin anticyclone dominates the local weather for days at a time, the concentrations of air pollutants continue to increase day after day. During mid to late January, 1976 such conditions prevailed. In the Salt Lake area daily violations of particulate, sulfur dioxide, and carbon monoxide, NAAQS were reported. It was during this time that Kennecott Copper Corporation was forced to curtail operations at the Garfield smelter in order to prevent ambient sulfur dioxide concentrations from exceeding the federal "Never To Be Exceeded" levels. It is strongly recommended that the worst case modeling utilize a winter time period representative of air stagnation conditions.

One other complication of the modeling for worst case is the model's inability to incorporate rising background pollutant concentrations during a period of air stagnation (Hurt, 1977). Some way should be found to input high background concentrations so that the net effect on the 24 hour average can be realistically determined.

VISIBILITY IMPACTS

As pointed out in the EIS (IPP V.II. p.8.3-9), the assessment of visibility impacts is an uncertain, imperfect, and complex task. One particular difficulty encountered in the determination of the particle scattering coefficient, b_{scat}. Variation in particle size distributions with time and travel downwind in the plume make determination of an appropriate b_{scat} value all but impossible. The alternation of particle optical properties results from complex physical and chemical processes continually occurring in the plume, which are poorly understood. Variation of sun declination and its relation to the observer and plume, further complicate the analysis. At present, no techniques exist that adequately deal with this problem.

CLIMATOLOGICAL EFFECTS

While precipitation near the Lyndyl plant site will probably be effected by particulate emissions, it is not probable that precipitation will increase as stated in the EIS (IPP V.II, p.8.3-1). The effect of condensation or ice nuclei on the production of precipitation are dependent upon many variables related to cloud microphysical processes. As pointed out by Alkezweeny and Smith (1974), an increase in condensation nuclei can rapidly increase the production of cloud droplets, which retards coalescence growth and in turn, reduces precipitation in warm clouds. So it is possible that warm season

precipitation in the Lynndyl area will be reduced, not increased.

Particulate emissions may also influence the establishment and reinforcement of temperature inversion layers by reducing solar insolation. This 7
can be particularly important during the winter season, when solar insolation is already at a minimum. Thus local meteorological conditions may be altered to worsen atmospheric dispersion. Both the precipitation and insolation effects from particulate emissions need further study and quantification.

ULTIMATE FATE OF EMISSIONS

The ultimate fate in the environment of the massive quantities of air contaminants emitted by the plant over the lifetime of the project needs to be addressed. Carbon dioxide and mercury emissions need to be quantified. Long range transport of and transformation of sulfur dioxide to sulfates may be significant to regional National Forest lands. The accumulation of lead, 8
arsenic, and radioactive trace elements near the plant needs to be monitored.

[illegible]

In order to fully assess the impacts of trace element accumulation, background or base line studies should be undertaken as soon as possible. The location and details of air pollution monitoring sites should be specified. All ambient air monitors used by IPP should be of a type that meets EPA reference or equivalent methods. IPP should also be required to fully disclose all monitoring and audit data at regular intervals.

27.1 Response: At this time, IPP plans to use only central Utah coal. If another coal source is selected, IPP must still comply with NSPS and PSD regulations. See Letter 26 Response 17 for additional information.

27.2 Response: IPP's proposal contains control measures to minimize fugitive dust from coal handling, storage, and on site transport (Vol. 1, Page 1-31). EPA considers these controls to be BACT.

The impacts of coal transport are addressed in Letter 25 Response 19.

Vehicle traffic to and from the plant would not produce a significant amount of particulate matter since all primary and secondary access roads to the plant would be paved (IPP Company Proposal).

Since the fugitive emissions from the plant would comply with BACT, no significant impact on the NAAQS for the particulate matter is anticipated.

27.3 Response: There is no generally accepted method of modeling SO_2 to sulfate particle conversion. The rate of conversion of gas particles is slow and the exact mechanism unknown when compared to the rate of atmospheric transport. However, if the gas-particle conversion did increase ground level particulate concentrations by 10 percent, the plant would still meet all applicable air quality standards and regulations (see letter from H. E. Cramer Company herewith included).

27.4 Response: The failure to refer explicitly to meteorological conditions other than the period examined does not mean that other cases were not considered. Based on the contractor's experience in modeling tall stack emissions for direct comparisons with observed air quality, these meteorological conditions were considered the most appropriate. For further information, consult the report "Calculated Air Quality Impact of the Emission from the Proposed IPP Power Plant at the Lynndyl Site" (H. E. Cramer Co., 1978) on file at the BLM Richfield District Office.

27.5 Response: The case of air stagnation was examined and found not to be the critical case for the IPP plant (see letter from H.E. Cramer Company herewith included). Worst case concentrations were estimated using the meteorological conditions of 22-23 June 1950. For more information, consult the report "Calculated Air Quality Impact of the Emission from the Proposed IPP Power Plant at the Lynndyl Site" (H. E. Cramer Co., 1978) on file at the BLM Richfield District Office.

27.6 Response: We agree with the conclusion that the state of the art in visibility modeling does not exist to adequately address this issue. See letter from H. E. Cramer Company herewith included.

27.7 Response: Condensation nuclei measured at the Four Corners power plant by the National Oceanic and Atmospheric Administration concluded that plant emissions neither contribute to detectable atmospheric ice nuclei concentrations nor deactivated natural ice nuclei.

Relatively high natural particulate concentrations occur on occasion at Delta. The incremental particulate concentration increase from IPP over natural background would add no detectable impact to solar insolation or overall meteorological condition (see letter from H. E. Cramer Company, herewith included).

27.8 Response: The impacts addressed in the DES are those considered to be significant and ones for which legal standards or regulations apply. Carbon dioxide has no applicable standards or regulations. The trace element emissions (mercury, lead, arsenic, etc.) did not represent a significant impact (see letter from H. E. Cramer Company).

If over the life of the project, additional standards are promulgated for pollutants not yet considered by air quality standards, IPP would have to comply with these standards, as applicable.

Long-range transport and transformation of sulfur dioxide to sulfates is slow compared to atmospheric diffusion. The secondary NAAQS for SO_2 are designed to protect vegetation such as National Forests. The maximum ground level concentration of SO_2 which is estimated for IPP is not only much below the secondary NAAQS, but also much below the PSD Class II increment. Based on the limited amount of SO_2 converted to sulfate and the small amount of SO_2 to begin with, the impact of SO_2 to sulfate conversion on National Forest would not be significant.

Monitoring for ground-level pollutant concentrations will be required by EPA, the Utah Bureau of Air Quality, and the BLM, as part of the PSD, construction, and right-of-way permitting process. The State of Utah is presently monitoring for particulate matter, SO_2, and NO_2 at a site near Sugarville, Utah. IPP has committed itself to following EPA reference or equivalent methods. Since these data would be submitted to EPA and the State of Utah, they would be available under the Freedom of Information Act from EPA.

IPP has proposed in-stack monitoring of SO_2, NOx, and oxygen concentrations and opacity for the Lynndyl and Salt Wash sites and ambient air quality monitors for SO_2 at the Salt Wash site.

H. E. Cramer company, inc.

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UNIVERSITY OF UTAH RESEARCH PARK

19 September 1979

Mr. Lynn G. Leishman
Bureau of Land Management
Richfield District Office
150 East 900 North
Richfield, Utah 84701

SUBJECT: Response to "Comments on the Air Pollution Impacts of the Intermountain Power Project, Lynndyl Alternative Draft Environmental Statement," submitted by Walter A. Klinger

Dear Lynn:

Thank you for the opportunity to review and respond to Mr. W. A. Klinger's comments on the Draft Environmental Statement (DES) for the proposed Intermountain Power Project (IPP) Plant at the Lynndyl, Utah site. Mr. Klinger divides his comments into the following general topics:

1. Unknown coal sources
2. Dispersion modeling
3. Visibility modeling
4. Climatological effects
5. Ultimate fate of pollutants
6. Environmental monitoring

Because Mr. Klinger requested a formal response to the issues and questions addressed in his statement, a detailed response to his comments is given below.

Unknown Coal Sources

According to IPP, coal for the proposed IPP Power Plant at the Lynndyl site probably will be obtained from existing mines and/or leases in the area considered in the Central Utah Regional Coal Impact Statement. The "worst-case" emission rates used in the air quality and visibility impact calculations were obtained by IPP by modifying the average coal quality for this area (see Section 1.2 of Bowers, et al., 1978). If the proposed plant is approved by the Utah Air Conservation Committee and the U. S. Environmental Protection Agency (EPA), the maximum emission rates used in the model calculations will become emission limitations (maximum allowable emission rates) for the plant. Also, IPP estimates that the typical emission rates will be well below the maximum rates used in the model calculations. Because regulatory agencies will not allow the proposed plant to have emissions that exceed the "worst-case" emissions assumed in the DES, the absence of contractual commitments between IPP and specific coal sources is not an issue that affects the DES.

Dispersion Modeling

Klinger raises three issues with respect to the air quality impact calculations for the proposed IPP Power Plant at the Lynndyl site: (1) uncertainties in pollutant emissions due to a lack of a specific coal source, (2) failure to consider fugitive emissions and gas-to-particle conversions of stack emissions, and (3) failure to consider what Klinger considers to be "worst-case" meteorological conditions. Uncertainties in coal characteristics do not affect the DES for the reasons given above. Klinger gives no basis for his assertion that fugitive particulate emissions from sources such as the handling and storage of coal and ash disposal will significantly contribute to violations of the National Ambient Air Quality Standards (NAAQS) for particulates. IPP plans to eliminate or minimize fugitive emissions by mitigating measures such as covering all conveyors and spraying all open storage piles with surface crusting agents (see p. 1-31 of the Salt Wash Proposal DES). Consequently, fugitive emissions are expected to be minimal. Klinger also fails to give any basis for his assertion that a consideration of the transformation of sulfur dioxide (SO_2) emissions to sulfates would increase calculated ground-level particulate concentrations by 10 percent under "worst-case" conditions. Because the oxidation of SO_2 to sulfate particulates is slow relative to atmospheric transport, we believe that consideration of the SO_2 to sulfates conversion would have a negligible impact on the maximum ground-level particulate concentrations calculated for the proposed plant. Although we do not agree with Klinger's contention about the effects of gas-to-particle conversions, we point out that a 10-percent increase in the maximum ground-level particulate concentrations given in the DES does not affect any conclusions about the plant's compliance with the NAAQS or the Prevention of Significant Deterioration (PSD) Regulations.

We agree with Klinger that air stagnation episodes in Utah result in high pollutant concentrations attributable to low-level emissions, especially in urban areas. However, on the basis of our studies for EPA of air pollution episodes in Allegheny County, Pennsylvania (Cramer, et al., 1975), the Seattle-Tacoma, Washington area (Cramer, et al., 1976) and elsewhere, air stagnation is not the critical meteorological regime for tall stack emissions of SO_2 and small particulates. The air quality impact assessment report notes that (Bowers, et al., 1978, p. 50), "The failure to refer explicitly in the following paragraphs to meteorological conditions other than the meteorological conditions associated with the highest calculated concentrations does not mean that other meteorological conditions were not considered." Emissions from the proposed IPP Power Plant generally can be expected to remain aloft and not mix to the surface during air stagnation episodes. Also, the maximum 24-hour average ground-level SO_2 concentration calculated using the Cramer and Bowers (1974) air stagnation model is only about half the maximum 24-hour concentration given in the DES for the "worst-case" 24-hour period. Both theory (for example, Pasquill, 1974) and air quality data (for example, Gorr and Dunlap, 1977) strongly support the selection of "worst-case" meteorological conditions used in the DES for the IPP Plant.

Visibility Modeling

We agree with Klinger that ". . . the assessment of visibility impacts is an uncertain, imperfect and complex task." The techniques used to assess the visibility impacts of the proposed IPP Power Plant (Bowers, 1979) are representative of the current state-of-the-art in visibility modeling and yield results for a specific calculation that are comparable to the results obtained by similar models independently developed by others (for example, Latimer and Samuelsen, 1978).

Climatological Effects

The climatological effects, if any, of emissions from an isolated coal-fired power plant that meets the New Source Performance Standards (NSPS) are not known. Schnell, et al. (1976) measured ice condensation nuclei upwind and downwind from the Four Corners Power Plant during January and February 1976 and concluded that plant emissions neither contributed to detectable atmospheric ice nuclei concentrations nor deactivated natural ice nuclei. Similar results were obtained during July and October 1975 and June 1976. Thus, it is unlikely that the proposed IPP Power Plant will have any detectable effect on precipitation in the Lynndyl area.

The existing air quality data for the Delta-Lynndyl area (see Section 1.3 of Bowers, et al., 1978) and the Delta Airport visibility data (see Section 2 of Bowers, 1979) indicate that relatively high particulate concentrations attributable to natural background and agricultural activities occur on occasion in the Lynndyl area. The incremental increases in particulate concentrations arising from emissions from the proposed plant will be so small in comparison with the existing particulate concentrations that no detectable reductions in solar radiation or changes in local meteorological conditions are expected.

Ultimate Fate of Emissions

The Salt Wash Proposal DES (p. 3-9) discusses the fate of trace elements contained in emissions from the proposed IPP Power Plant at the Salt Wash site and concludes that, "IPP would make a relatively small contribution to existing levels during the project's life." Equivalent impacts can also be expected at the Lynndyl site. The long range transport of SO_2 emissions and the transformation of SO_2 to sulfates are subjects of considerable uncertainty. However, it is important to note that the use of low sulfur coal and a 90-percent efficient flue gas desulfurization (FGD) system will result in total SO_2 emissions from the proposed plant that are an order of magnitude lower than the total SO_2 emissions from existing, smaller power plants. Consequently, no significant regional impacts are expected as a result of SO_2 emissions from the proposed plant.

Environmental Monitoring

BLM, EPA and the Utah Bureau of Air Quality will all require that IPP conduct environmental monitoring programs. IPP has indicated to us that it plans to conduct an environmental monitoring program, using EPA reference or equivalent methods, and that the results will be provided to the responsible government agencies for public inspection.

We hope that our comments clarify the issues and questions raised by Klinger.

Sincerely yours,

James F. Bowers

James F. Bowers

/cc
Enclosure

cc: Dr. William W. Wagner (BLM)
Mr. Alan G. Larson (BLM)
Mr. James H. Anthony (IPP)

REFERENCES

Bowers, J. F., H. E. Cramer and A. J. Anderson, 1978: Calculated air quality impact of the emissions from the proposed IPP Power Plant at the Lynndyl site. H. E. Cramer Company, Inc. Technical Report TR-78-450-01, prepared for the Intermountain Power Project, Sandy, Utah.

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United States Department of Agriculture
Soil Conservation Service
4012 Federal Building
125 South State Street
Salt Lake City, UT 84138

28

September 10, 1979

Donald L. Pendleton, District Manager
Richfield District Office
Bureau of Land Management
150 East 900 North
Richfield, UT 84701

Dear Mr. Pendleton:

We have reviewed the draft environmental statement for the "Intermountain Power Project". Most of the areas where the Soil Conservation Service has interest or expertise have been adequately addressed.

1 The impacts on agricultural land, where the irrigation water supply is taken for project purposes, is not completely covered. When the irrigation water supply is removed from areas of low precipitation, serious erosion problems occur unless permanent vegetation adapted to low rainfall is established before the water supply is removed. If the replacement vegetation is properly selected, this could be a signifficant benefit to wildlife.

2 The acres of prime agricultural land are not identified. The problem of erosion on abandoned farmlands is not addressed.

3 The economic and social impact from losing the 145 animal unit months of forage due to land use changes and 4,089 animal unit months from drying up springs and seeps should be addressed.

We appreciate the opportunity to review and comment on this proposal.

Sincerely,

George W. Watkins
State Conservationist

cc:
Administrator SCS - USDA, Washinton D.C. 20013
(5) Director Office of Federal Activities (Mail Code A-104)
Environmental Protection Agency, Room 537 West Tower, 401 M Street, S. W., Washington D.C. 20460

28.1 Response: The analysis in Vol. 2, Page 8.3-12 shows that erosion problems were not expected to occur on croplands through the change in use of water from agriculture to industrial use. This analysis result came from consultation with Soil Conservation Service specialists in the Delta area, who stated that "Most agricultural soils in the area are clay that would not be susceptible to wind erosion and water erosion is not a problem." No revegetation of the area is proposed, except as land owners may wish to do so. It may be possible for the State to require specific regulations as part of water use change approval. If not planted to other species, it is expected that ragweed (Ambrosia spp.) and saltbush-greasewood (Atriplex - Sarcobatus spp.) would cover the soils within a short time, and these species would provide some food and cover for wildlife.

28.2 Response: The DES (Vol. 2, Page 8.2-49) indicates that data on "prime" farmland in Millard County are not available. Page 8.3-33 states that 7,250 to 7,760 acres of agriculture land could be removed from crop producton. This agricultural land is analyzed in Vol. 3, Page 153.

Erosion on abandoned farmlands is addressed in the analysis in Vol. 2. Page 8.3-12 shows areas most likely to be impacted by erosion are lands that produce little vegetation and where soils are sandy or silt. Most of the agricultural croplands in the Delta area are clays that are not subject to wind erosion.

28.3 Response: If the value of the 145 AUMs lost is based on the cost of replacement feed (alfalfa hay), the dollar loss could be estimated as follows:

$$\frac{\$55/\text{ton of hay}}{2.2\ \text{AUMs/ton}} = \$25/\text{AUM} \times 145\ \text{AUMs} = \$3,625.$$

This estimate is probably high and the loss ($1,315) would be shared by 43 ranchers who use the allotment. Therefore, there would be no significant social or economic impacts that could be discussed in the ES.

The loss of AUMs due to the potential drying up of springs and seeps would be mitigated by measure 2, Vol. 1, Page 4-1 which states:

"Until natural flow resumes, the applicant would replace all water which is lost at springs, wells, and seeps, as a result of diverting water out of the Fremont River and pumping water from the Navajo Sandstone. The plans and actions related to the replacement of water would be reviewed and approved by the appropriate federal official."

David E. Creighton, Jr.
7300 E. Fillmore St.
Scottsdale, Arizona 85257
September 9, 1979

District Manager
Richfield District Office
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

29

Dear Sir:

On Balance for quality of information, extent of display and quality of presentation, the Draft EIS on the Intermountain Power Project is one of the best statements which I have reviewed.

I have a few comments and some suggestions relative to Bald Eagles and the possibility presented for some significant habitat enhancement.

Pg I-35-36. The Red Desert Reservoir with an area of about 1000 acres could be augmented by specific habitat enhancement through: the installation of support structures for hunting perches, nest structures and guard and loafing perches which in combination with a prey base of planted fish and planting of quick growing tree species for future nest and perch sites. With an appreciable population of wintering Bald Eagles and nearby nesting population of Osprey, the judicious management of this potential new water body would be a significant effort in Bald Eagle biology and toward the aims and long-range goals of any appropriate Bald Eagle Recovery Plan which may be developed in the future. 1

Platforms on Transmission towers , and examination of evaporation ponds should also be considered.

Pg I-44. Why was a 500 kv dc line selected rather than a 750 kv or 1000 kv dc line which would be compatible with the existing Los Angeles Pacific Northwest Intertie or the proposed (but possibly deferred) completion of the Dalles-Mead-Phoenix 1000 kv dc line? How is IPP compatible with inter-regional power system and National power grid planning? 2

Pg I-62, F.10. Decommissioning. The discussion appears to be a sop thrown in for environmental anti-development activists who are unwilling to think of society continuing to upgrade and extend the use of existing facilities particularly for transmission corridors. What precedent do you base this concept. In light of history, this scenario appears to be a ridiculous attempt to forecast the death of our culture and society but time enough to obliterate our traces to confound future archeologists. 3

Pg I-63, D.1.i. Red Desert Reservoir use. A higher use that should be considered would be to create habitat for Osprey and Bald Eagle and allow recreation by the public to the extent compatible with Bald Eagle Recovery Plans which may be presently too short-sighted. In Florida, Bald Eagles colonized a steam plant cooling pond within two years after being placed in service (Hirth, pers. comm.). 4

Pg I-65, D.2.f. Which endangered species is meant in reference to the biological opinion? If Bald Eagles, a thinking mind is necessary to avoid perpetuating mythology presented by many amateur birdwatchers and some professionals. 5

I-66, .n. Non-specular conductors is an unnecessary fetish unfortunately adopted as total standard practice by some when it is unnecessary. A type of measure which can hasten the bancrupting economically and intellectually of this nation. 6

pg I-67, 68, 70, Table I-16, H.1. Why aren't Allen, Mohave, Cholla, Coronado and the proposed Springerville (TUE), or Palo Verde (SCE) shown or mentioned. Base power generation is germane to the Southwest power situation as is the California Department of Water Resources need for coal-fired generation for supplying California Aqueduct system needs. The inclusion of some of the plants in Table 4 (Vol III, pg 66) calls for a greater exposure in light of the cancelling of construction of PVNGS Units 4 & 5. 7

pg I-76-77, Table I-17. In light of 2.f. (pg I-65) why has FWS been omitted and parallel omission of SCRS, REA is a component of DEpartment of Agriculture is it not? 8

Pg. 2-26, Fig. 2-11. This figure is a very poor quality photo to try to use for information purposes relating to soil texture and plants. Send the photographer back to take some more photos after he has learned to focus the lens and get better definition and depth of field by varying the f-stop. Fig. 2-13 is not much better.

Pg 2-40, Animal Life. Because birds are to large seasonal residents, a further breakdown of resident, breeding, spring, summer, fall, winter visitors, or occasional should be given. The Appendix II-13 table (pg IIB-150) listing shows no fish as compared to 33 in this volume, 4 reptiles vs. 36 (incl amphib) 63 birds vs. 307, and 17 mammals vs 79. Census lists of possible, probable, hypothetical, and extirpated all intermingled is very misleading--the common numbers game syndrome. You can do better. 9

Pg 3-22, D.1.a. Bald Eagles have a potential for enhancement and territorial expansion with proper habitat component design.

Pg 3-24, 26. "If bald eagles were displaced..." A hypothetical negative supposition could probably be changed through habitat manipulation. Some positive studies and efforts should be made rather than adopt the usual 'hand wringing' attitude. 10

Pg I-5, 6. Carrion feeding to supplement road kills and other prey base for Bald Eagles could be a management tool to employ. The habitat component installation at Red Desert Reservoir could be more than mitigation, it would be long term enhancement. 11

Pg 6-6. Power Pole - Transmission structures could be modified or supplemented with raptor nesting boxes or platforms after Morlan Nelson's designs. 12

Pg 7-2, Table 7-1. Animal Life. Some species could be benefitted rather than have adverse impact commitments. 13

Pg 8-21. I Alternative Transmission Systems. The choice of 500 kv dc over 750 kv dc or 1000 kv dc should be discussed in light of other existing and planned systems to the Los Angeles-Arizona-Nevada area. 14

Vol II. Several of the comments on Vol I are also applicable to Vol. II,

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such as the statements on Bald Eagles on pg 8.3-24, 8.5-3, and wildlife species numbers on pg 8.2-33.

Vol III pg 7. The impact on wintering eagles is a long way from coming close to jeopardizing their continued existence. This sentence while it may be simplistically correct implies more impact of a severe nature than is warranted or justified. A very biasing phraseology. 15

Pg. 25. This sup osition that base load power could be available to purchase in the future is just that, a supposition. In the absence of new base load plants like IPP there will shortly be a deficit in base load supply from any source. Recent environmental litigation over a Utah site for a solar energy installation demonstrates the unthinking opposition of some interests to any new energy production facilities. 16

Pg 37. Agency #11- USBR has seven regional offices. Where is #0 located? Should this have been Lower Colorado Region (formerly Region 3) in Boulder City, Nv, or Upper Colorado Region (formerly Region 4) in Salt Lake City? 17

Please send me a copy of the Final EIS.

I am also enclosing a short description on Western United States Transmission Grid Concepts, with sketch map A. It may be of interest for this IPP statement and for the continuum of efforts which will be made to translate mineral resources of the IntermountaIn Area into energy on site at different locales.

Sincerely,

D. E. Creighton, Jr.

Enclosure Included in Original Letter File

29.1 Response: Wildlife habitat management plans would be developed in the future for the proposed Red Desert Reservoir if the project is approved and compatible arrangements can be made with proponents of the power generating project. The BLM has an active wildlife habitat management program which considers such proposals.

29.2 Response: The initial IPP transmission system design study (by the city of Los Angeles, Department of Water and Power [DWP] November, 1975) included an analyses of the choices you suggested. Concurrent with IPP's study, a study group was formed under the leadership of the U.S. Bureau of Reclamation to recommend a transmission system to southern California from the various proposed power projects in Utah, Nevada, and Arizona. This study and analysis (USBR, July 1975) recommended a 500-kV a.c. system. Another system study by Westinghouse Environmental Systems Department (WESD, Feb. 1976) recommended a 500-kV d.c. system based on the relative environmental merits. Based on all the facts presented, a 500-kV d.c. bipolar system was chosen for the IPP transmission system.

Additionally, the whole proposal is based on IPP's assumption that agreements with other utilities can be made to interconnect and be compatible with other existing and proposed transmission systems (Preliminary Engineering and Feasibility Study, IPP, Vol. 3, Part I, October 1976).

29.3 Response: Your comments are acknowledged. Decommissioning is addressed in the statement to assess the long-term consequences or conditions associated with the power plant and ancillary facilities. Changes in technology, power needs, and numerous other influencing forces will eventually help decide if and when decommissioning actions will take place.

29.4 Response: Wildlife and recreational use planning is part of BLM's land use planning program.

29.5 Response: The bald eagle is the primary species involved in the FWS biological opinion found in The Additional Information Section of the FES.

29.6 Response: The use of non-specular conductor enhances mitigation of visual impacts.

29.7 Response: Information given on Table 1-16 and Pages 1-67, 68, 70 only reflects those generating projects in which the California Municipalities in IPP are participants. Palo Verde is listed on Table 2-4.

29.8 Response: Authorizing actions are required from the U.S. Fish and Wildlife Service for Desert Game Range and Section 404 permits from Corps of Engineers. Revised pages (Vol. 1, Page 1-78; Vol. 2, Page 8.1-37) containing changes (underlined) included in Addendum. No authorizing actions are required from the Heritage Conservation and Recreation Service. The Rural Electrification Administration is part of the Department of Agriculture.

29.9 Response: The detailed information to which you refer can be reviewed in the Richfield District Office files. This information does not add materially to the analysis because the impact to this group of wildlife would be insignificant. Page 2-40 refers to regional setting, while Appendix II-13 refers to observed animals at the Salt Wash site and along the Fremont River.

Vol. 1, Page 2-40 has been changed to further reflect the present situation regarding protected species. Revised page containing change (underlined) included in Addendum.

29.10 Response: Mitigating measures that would eliminate impacts to bald eagles during construction of the transmission lines are listed in Vol. 1, pages 4-2 and 4-3 of the DES.

29.11 Response: Although your suggestion has merit, it is not one which would be appropriate for a mitigating measure to impose on the applicant.

The habitat component at Red Desert Reservoir is considered as a long-term enhancement (see DES, Vol. 1, Page 6-6, last sentence, fourth paragraph).

29.12 Response: Your suggestion has merit, however, the analysis of the proposal did not identify any need for increased nesting structures for raptors.

29.13 Response: Vol. 1, Chapter 7 details commitment of resources, not adverse or beneficial impacts. Impacts to wildlife species are discussed in Vol. 1, Chapter 3, Aninal Life section.

29.14 Response: Alternative transmission systems are discussed in Letter 29 Response 2.

29.15 The sentence to which you refer states that "the impact on the population of eagles would not be severe enough to jeopardize their continued existence." The phraseology is in line with the Endangered Species Act of 1973.

29.16 Response: Comment noted; the shortage is demonstrated on Figure 1-2, Vol. 1, Page 1-7.

29.17 Response: Comment noted; this was a typographic error and the text page will not be reprinted to reflect this change.

STATE OF UTAH

SCOTT M. MATHESON
GOVERNOR

OFFICE OF THE GOVERNOR
SALT LAKE CITY
84114

September 6, 1979

The Honorable Cecil D. Andrus
Secretary of the Interior
Department of the Interior
18th & C Street
Washington, D.C. 20240

Dear Cece:

Enclosed are specific comments on the Intermountain Power Project Environmental Statement developed by various agencies of the Utah State Government. I want to commend the Bureau of Land Management for the comprehensive and expeditious manner in which they have assembled this document. I particularly appreciate the effort you made to work with me to find a mutually agreeable location for the project.

As you know it has been the State of Utah's position that the Salt Wash location provided an adequate site for the plant. However, I appreciate the responsibilities you face in deciding where to grant permits for the location of projects on public land. As the environmental statement shows, Lynndyl offers a desirable alternative site to construct IPP. If the decision is made to proceed with construction at Lynndyl, all levels of government - especially BLM and the State of Utah - will need to work closely with the project sponsors to mitigate the adverse socio-economic impacts from the plant on Carbon, Emery, and Millard Counties. It is essential that adequate planning and funding be provided at the front end of the development. I look forward to future discussions with you on how best to make certain that this occurs.

Again let me thank you and your staff for the professional and cooperative manner in which you have worked with the State of Utah on this project.

Sincerely,

Governor

SMM:kb

Enclosure

9-104

STATE OF UTAH COMMENTS ON
THE INTERMOUNTAIN POWER PROJECT
DRAFT ENVIRONMENTAL STATEMENT

Volume 1 -- Salt Wash Site

Air Quality

1 It is not clear why certain areas in east-central Utah are classified as "areas of air quality concern" on the map on page 2-5. That designation should be explained. The State is not considering these areas for possible Class I designation. Further, Cedar Breaks National Monument is not included on the map with other parks and monuments.

2 The State agrees that "no impacts on human health and welfare, animals or vegetation would be expected" from operation of the plant at the Salt Wash Site. This fact should be stressed in the air quality analysis since those standards that may be violated have no basis in the protection of human health or welfare.

3 Direction from EPA concerning visibility reviews is scant. The approach taken by BLM seems a fair and scientific appraisal of worst case conditions. Those impacts projected (page 3-12) do not appear to be significant or to violate the intent of the 1977 Clean Air Act Amendments.

4 In the discussion of adverse impacts (page 5-1) SO_2 and particulate emissions are calculated at 100% capacity levels, but nitrogen oxides are based on an 85% load. For the sake of consistency, the emission levels should be calculated at the same capacity.

Land Use

5 BLM often refers to the impacts on the "proposed Hondu Primitive Area." What is the status of this proposal? Isn't the issue superceded by the Wilderness Review mandated by FLPMA? When will this proposal be open for public comment?

Socioeconomics and Quality of Life

The quality of life data and analysis provided by Dr. Stanley Albrecth of Brigham Young University is excellent. This section provides a level of sophistication above the usual analysis which only asks residents if they favor or oppose "growth" or specific projects. The analysis also indicates that while local residents are generally informed about impacts, they need more reliable information on the impact that a specific project might have on their own economic standing. Few residents appear to recognize the substantial costs that many long-term residents may be forced to bear.

6 The socioeconomic data (pages 3-43 and 3-47) indicate that from 1987 to 1990, employment, earnings and per capita income will all drop. There is not an adequate discussion of the impacts on the residents and the communities of this "bust" part of the construction/operation cycle. These impacts should be discussed and possible mitigating measures should be investigated.

7 Even though State and local officials do not agree on the exact populations generated by IPP coal development (page 3-51), it is clear that those impacts would be substantial, particularly when added to current and projected impacts from coal development in the Carbon-Emery County area. Less attention should be paid to the numbers and more to identifying means of providing the increased population with essential services.

Water

8 The environmental statement points out that the power plant operation at Salt Wash would use an estimated 30,000 acre-feet of water per year from the Fremont River and that "other uses of the water would be precluded for the life of the project." It then goes into detailed examples (page 6-3) of what the water could not be used for. This is inappropriate for the environmental statement, since it is not BLM or IPP, but the State of Utah that determines what the water may be used for. It is particularly inappropriate in view of the official policy statement made in 1975 by the Board of Water Resources that a dam and reservoir be constructed on the lower Fremont River and that supplemental water for irrigation be financed largely through the sale of water for an electric power plant in the Caineville area.

The Division of Water Resources did considerable investigation into the potential of a multipurpose (thermal power generation and irrigation) dam and reservoir project on the Lower Fremont River. From a water resources standpoint, the Salt Wash location is extremely good, and particularly desirable in that additional agricultural water would be made available, financed largely by contracts with IPP for water.

Human Health and Safety

9 The accidents and fatalities associated with projected coal mine development should also be included.

Aesthetics

10 The discussion of the aesthetic impacts of the plant at Salt Wash (page 3-28) are negative, indicating that aesthetic resources would be sacrificed. Yet the same plant at Lynndyl "would be considered a landmark of interest to some and an aesthetically degrading intrustion to others." (page 8.3-28). That statement should be applied to the plant at both sites. Wayne County travelers could perceive the plant as a "landmark of interest" as easily as those in Millard County.

Wildlife

11 Page 1-67, paragraph t. All power transmission lines should be raptor-proofed.

12 Page 1-67, a paragraph v. should be added stating that transmission line construction should be scheduled with critical wildlife values in mind such as in areas of winter concentration when wildlife are gathered or through breeding concentration areas during the breeding season.

13 Figure 2-14. The presence of all significant riparian habitat should be shown along the Fremont River.

14 Page 2-40, Animal Life. The figure of 354 protected species should be increased to 392 species since recent legislative action in Utah placed all

amphibians, reptiles, kit fox and bobcat on the protected list. The other descriptions relative to wildlife on page 2-40 should be adjusted to show these changes. This also applies to page 8.2-33 of Volume II.

15 Page 2-41, Terrestrial Wildlife. Distributions of big game in Figure 2-16 are reasonably accurate for those shown; however, not all big game distributions in the regional setting are shown. Similar comments apply to Figure 2-18 in relation to threatened and endangered species, raptor and waterfowl distributions.

16 Page 2-41, paragraph 5. The bald eagle is a winter resident between November 15 and March 15 each year. Significant populations occur along the Green and Colorado rivers and around Lake Powell. It is also believed that a peregrine falcon eyrie exists in the San Rafael Desert. This is based upon many confirmed observations during the last five years.

17 Page 2-47, Figure 2-18. The Fremont River from the east boundary of Capitol Reef National Park to its confluence with Muddy Creek is not an important fishery; however, the riparian zone is important to all wildlife associated with the river.

18 Page 2-48, paragraph 2. Not only do migrating waterfowl stop along the Fremont River, springs and available stock ponds, but some also remain during the breeding season and produce their young.

19 Page 2-51, paragraph 6. The paragraph should be changed to read "... activities that occur in the region include hunting for game and nongame wildlife, trapping, fishing, rockhounding..." As worded in the draft, hunting is only indicated for some game species, and trapping is not identified.

20 Page 2-95, part 6.a. The increasing human population will not necessarily result in a decreasing fish population but will create greater demand for fishing and increased demand on the DWR fish stocking program.

21 Figure 2-H, The Environmental Profile: Southern California Transmission System. The power coorridor passes through important Gambel's quail habitat from St. George through Cedar Wash.

22 Page 3-20, G.1.a. With proper management, deer herds will not decline; however, as human populations increase, the need to further restrict the harvest of deer will increase. This will decrease deer hunting opportunity for individuals. The same trends will apply to other game species as well, at least to some extent. A greater demand would be placed on DWR to protect these resources.

23 Page 3-22, paragraph 1. DWR's current management goal is to maintain a herd of 200 bison, exclusive of calves, on the Henry Mountains. Increased harassment or poaching could cause the herd to decline to some lower level in population numbers. Since this is unlawful and limiting, it is considered significant and not minor.

24 Page 3-23, paragraphs 2, 3, and 4. It is not likely that the shoreline of a diversion pond would become vegetated to any significant degree if

fluctuating water levels occur. The potential vegetation at a diversion pond would not be an adequate trade-off for a loss of 20 percent of the riparian habitat along the Fremont River.

25 Page 3-24, paragraph 1. Winter range is normally utilized by deer and elk from November 1 through May 5 each year.

26 Page 4-2, part c. The power transmission line through Dog Valley should be moved at least one mile to avoid the sage grouse strutting ground.

9-106

Volume II -- Lynndyl

Background

In lieu of stating that the Interagency Task Force weighted air quality consideration most heavily (page 8.1-3) BLM could insert the exact weightings used:

27

Socioeconomic criteria	- 21%
Water criteria	- 14%
Environmental criteria	- 22%
Land Use criteria	- 16%
Economic criteria	- 18%
Other air uses	- 10%

From the aggregation, it is difficult to conclude that air quality was weighted far above other criteria.

Coal

28 The impacts from hauling the coal from the Central Utah coal fields to Lynndyl (page 8.1-25) should be given more consideration. Will changes in the physical structure of the railroad be necessary to accommodate the increased traffic? How will areas between the two points be impacted?

Land Use

29 The statement indicates that crops will be cut by certain percentages in the Lynndyl area due to transfer of water rights to IPP. (page 8.3-33). This analysis should be carried one step further. If 51% of the land currently used for alfalfa seed is lost, it is logical that farmers will change to that crop to make up the loss, if it is economically favorable. The losses will probably be more even than the initial numbers might indicate.

Air Quality

30 BLM may be considering the Deep Creek Mountains for a possible Class I designation (page 8.3-6), but only the State can effectuate a redesignation. The discussion of impacts is useful, but it is not likely that the State will pursue a redesignation of the Deep Creek Mountains. The statement should more explicitly state the procedures and authorities for redesignation under the Clean Air Act Amendments.

Water

Since the Division of Water Resources provided a water resources expert as a member of the BLM team which formulated the environmental statement for the Lynndyl alternative site, the State believes that the water resources portion of the Lynndyl site alternative is as factual as available information will allow. Clearly, water is the key variable as the Lynndyl site and should be given careful attention.

Paleontology

31 On page 8.3-11 and at other points (Vol. III, p. 5), the admittedly unquantifiable impacts on paleontology are presented as significant. If BLM believes this, mitigating measures should be identified. If not, the statement should be clarified to indicate that expected impacts are not substantial.

Socioeconomics and Quality of Life

32 It appears that population, employment and per capita income will drop in Millard and Juab Counties from 1987 to 1990 (page 8.3-39). While this downturn is not as large as the one that might be expected in Wayne County, the "bust" still deserves a more complete discussion. Are there steps that can be taken during the construction phase that will ease this transition?

Albrecht's work (page 8.3-58) confirms that water is the key issue at Lynndyl. His analysis of local residents isolates the sale of water as an economic issue and provides a clue to the overall support of IPP in the Delta area.

Wildlife

33 Figure 8.2-12. This vegetative map should be modified to clearly distinguish between types (e.g., pinyon-juniper and cold desert types are both white; mountain brush and urban agriculture are barely distinguishable).

34 Page 8.2-35, paragraph 6, concerning bald eagles. Bald eagles have been sighted in numbers at Minersville Reservoir, North Creek and South Creek by Beaver, east of Milford in several roosting areas and at Garrison Reservoir. The National Bald Eagle Survey of 1978-79 recorded a minimum of 658 bald eagles in Utah this winter, a majority of which were found in the southern part of the state. Many of these birds migrate through the western deserts following water courses, so their presence in this area is probably much more extensive than that indicated in this report. This also applies to page 8.2-39, paragraph 6.

35 Figure 8.2-14. Shading depicting sage grouse and pheasant distributions is not distinct.

36 Page 8.2-39. The last paragraph states that transmission lines would not cross critical habitats of the desert tortoise on the west side of the Beaver Dam Mountains. Figure 8.1-15 indicates a possible crossing of desert tortoise habitat by both the line from the Paragonah substation and the St. George substation. Both of these lines cross important Gambel's quail habitat, and the line into St. George crosses critical deer winter range.

37 Figures 8.2-A through 8.2-G, Transmission line-environmental profiles. The game habitat legend fails to identify the meaning of several notations for important game habitats.

38 Page 8.3-23, 7.a.(1). Fools Creek Reservoirs are also important to migratory birds in fall and provide important hunting opportunity that will be lost.

39 Retirement of 7,250 to 7,760 acres of irrigated farmland in eastern Millard County could also be beneficial to pheasant populations depending upon how it is located in relation to remaining cropland and how it is managed. If these lands are interspersed among remaining croplands and if properly grazed (assuming this to be the ultimate land use) to provide standing residual grasses and forbs in early spring, they could provide important pheasant nesting cover and roosting areas.

40 Page 8.3-23, 7.a.(1), last paragraph. Big game herds and populations of other animals would not be allowed to decrease; rather, harvest would be restricted. Thus, the increased number of sportsmen in that area could result in decreased hunting opportunity for those already living there. There would be more competition for a place to hunt.

41 Page 8.3-24, Aquatic Wildlife. The statement, "These additional fish requirements constitute less than one percent of the annual fish yield for Utah fish hatcheries...," seemingly is presented to show the insignificance of projected increased fishing demand. This is not true. The demand for an additional 56,000 fish is very significant, both cost-wise and in terms of the added burden on the state's hatchery program. Since sportsmen would be reluctant to accept decreased fishing success on an individual basis, pressure would be placed on DWR to rear and stock more fish. This increased demand could not be satisfied by revenues from related increased license sales. Changing fish stocking priorities would not resolve this problem.

42 Page 8.3-24, Terrestrial Wildlife. Borrow areas for construction should not be located in areas of critical wildlife habitat.

43 Page 8.3-25, California Transmission System. It is expected that the power lines in question will pass through and, to some degree, detrimentally impact important populations of Gambel's quail.

44 Page 8.3-26, Utah Transmission System, and page 8.4-1, Mitigating Measures. An effort should be made to relocate the proposed transmission lines to avoid critical deer winter range and sage grouse strutting grounds and to minimize impacts on other less critical winter ranges.

45 Page 8.5-3, Animal Life. Detrimental impacts on pheasants could be avoided, depending on the location of these lands and the degree of interspersion in remaining croplands, if retired lands are managed in a way to maximize residual cover. Such lands could be planted to grass-legume mixtures and cover protected in strips along field borders and in odd corners.

46 Pages 8.8-16 and 8.8-38. No mention is made of animal life. Is this because none were identified or were they inadvertently left out?

Volume III -- Alternatives

Air Quality

47 The Glen Canyon National Recreation Area is not a Class 1 area; it should be deleted from the list on page 2.

Again, the visibility impairment does not appear significant at Salt Wash and should be within the bounds of the 1977 Clean Air Act Amendments.

Alternatives

Perhaps this section should include a general discussion of the Intermountain Power Project and alternative energy sources. All sources, particularly conservation and solar energy, which are more environmentally acceptable, should be pursued with all possible haste. But IPP is meant to complement this development and not preempt it. If other sources make a 48 large contribution than is projected, more foreign oil can be displaced by IPP. These other sources of energy are not reasonable alternatives to IPP in the short term since no source can provide as much energy as that source and IPP combined. These are all routes that must be pursued simultaneously.

Procedural Comments

The Utah Geological Survey is listed twice as a nongovernmental agency. 49 It is a Division of the State Department of Natural Resources.

50 The State of Utah should have been included on the scoping team referred to on page 37.

Wildlife

Page 5, Water Resources. A four percent reduction in flow of Clear Lake Springs could have a detrimental impact on Clear Lake Waterfowl 51 Management area, especially during otherwise low water years. This impact is not discussed in Volume II. This should be done even though the extent of impacts is unquantifiable with existing data.

Page 6. The summary provides a quite brief comparison of impacts. It should be expanded to include a comparison of other impacts, such as critical 52 deer winter range. A table summarizing all measurable impacts would be very useful for alternate site comparisons.

30-1-6

30.1 Response: The identified areas of air quality concern are areas that BLM is reviewing to determine if air quality related values are worthy of Class I protection. BLM may recommend these areas to the State of Utah for Class I reclassification. The text has been expanded to clarify the perogative of the State in the reclassification process. Revised page (Vol. 1, Page 3-5) containing changes (underlined) included in Addendum.

30.2 Response: This issue is addressed in Vol. 1, Page 3-2.

30.3 Response: EPA has not yet provided formal guidance for visibility modeling analysis or regulation with which to assess the significance of identified impacts.

30.4 Response: The NO_2 standard is on an annual basis. Since the annual operating rate was assumed to be 85 percent of capacity, these emissions were used to estimate the NO_2 impact. There are no short term NO_2 standards. The 100 percent capacity level emissions were used to estimate short-term SO_2 and particulate matter concentrations only.

30.5 Response: The Wilderness Review mandated by the Federal Land Policy and Management Act of 1976 (FLPMA) does not supersede BLM's authority to designate Primitive Areas. Wilderness and Primitive Area designations are two different actions under two different authorities. FLPMA gives BLM the authority to review lands under its jurisdiction for wilderness values, but actual designation of any area or wilderness can only be done by Congress. On the other hand, BLM is given the authority to actually designate Primitive Areas in Sec. 1 (b) (1), 78 Stat. 986, R.S. 2478, as amended; 43 U.S.C. 1411, 1201. An area not designated as a Wilderness Area by Congress could still be designated and managed as a Primitive Area by the BLM.

The Hondu area has been identified as having primitive values with potential for Primitive Area designation. There is no management proposal presently available for public comment. Development of such a proposal has been temporarily curtailed while the wilderness review is taking place. This is because if a portion of the area were designated as a Wilderness Area, it would not also be designated as a Primitive Area.

30.6 Response: Text changes have been made which discuss the effect of the change from the construction phase to the operation and maintenance phase. Revised pages (Vol. 1, pages 3-38, 3-44, 3-47) containing changes (underlined) included in Addendum.

While there are possible mitigating measures that might be taken, only those already in the ES meet the criteria of being "committed" or "enforceable."

30.7 Response: To be discussed in the ES, mitigating measures must meet the criteria of being ". . . feasible, committed, and enforceable by government agencies. . ." (see Vol. 1, Chapter 4, Introduction).

Only those measures which meet these criteria are discussed in the ES. See Letter 8 for additional information concerning revenues.

30.8 Response: This section on water only discusses for analytical purposes the extent that the project could involve commitments of resources. The analysis process was not intended to determine actual potential uses of water. The intent was to give a general range of uses for the water. It was not the intent to determine policy for the Board of Water Resources. BLM recognizes that water uses are subject to agreements and approvals from Utah water regulatory officials.

30.9 Response: Comment noted; revised page (Vol. 1, Page 3-58) contain these changes (underlined) included in Addendum.

30.10 Response: Comment noted; revised pages (Vol. 1, pages 3-28 and 5-7, Vol. 3, Page 10) containing these changes (underlined) are included in the Addendum.

30.11 Response: The design of high voltage power transmission lines (Vol. 3, Appendix I-6) makes them raptor proof. The BLM would require (Vol. 1, Page 1-57) that all low voltage power transmission lines also be raptor proof.

30.12 Response: Vol. 1, pages 4-1, 4-2, and 4-3 include information on scheduling construction phase to protect critical wildlife values.

30.13 Response: The riparian area along the Fremont River was inadvertently omitted on the generalized map, Figure 2-14, Page 2-37, Vol. 1. It should be considered to run the length of the river and occupy an area about 35 feet wide on each side of the stream. Revised page (Vol. 1, Page 2-33) included in Addendum.

30.14 Response: Comment noted; revised pages (Vol. 1, Page 2-40 and Vol. 2, Page 8.2-33) containing these changes (underlined) included in Addendum.

30.15 Response: Only those big game, threatened and endangered species, raptor and waterfowl distributions which could be materially affected by the proposal are depicted on Figures 2-16 and 2-18. Although general in nature they were designed to provide only for the general distribution of the more significant species of animal life likely to be impacted by the proposal. More detailed information is available in the Richfield District Office files.

30.16 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

30.17 Response: Comment noted; revised figure containing the deletion included in the Addendum.

30.18 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

30.19 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

30.20 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

30.21 Response: No significant impacts to Gambel's quail as a result of transmission line construction have been identified, thus they are not included on the figure.

30.22 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

30.23 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

30.24 Response: The intent of the statement on Page 3-23 regarding revegetation was to recognize the possibility of some revegetation of the diversion pond. There was no attempt to suggest that the potential vegetation around the pond would be an adequate trade-off for riparian loss. The possible impact is identified in Vol. 1, Page 5-5 and should it occur, it would be an unavoidable adverse impact.

30.25 Response: Comment noted; revised page containing this change (underlined) included in Addendum.

30.26 Response: The location of this route has been coordinated with the local office of the UDWR and the route does avoid the known sage grouse strutting grounds.

30.27 Response: Comment noted: revised page showing deletion (arrow) included in Addendum.

30.28 Response: Analysis and identificaton of impacts in Vol. 2, pages 12 and 18 and Vol. 1, Page 3-33, points out that all impacts are not identified. It appears that most concerns would be at the plant site and coal production areas. Both terminal areas are addressed in the DES and the existing railroad was considered to be adequate with the construction of the spur route into the Lynndyl project site.

30.29 Response: The crop loss figures in the OES are the products of a "worst case" analysis of what the impacts might be to the local area. The crop loss assumptions and results used in this analysis were reviewed by and agreed to by farmers and other authorities in the local area. However, due to the many variables involved in this type of situation, these figures represent only best estimates of the probable impacts. (Letter 13 suggested that we had overstated these impacts.)

30.30 Response: Comment noted; revised page containing change (underlined) included in Addendum. Text has been added to Page 8.2-6 to indicate procedures and authority for redesignation.

30.31 Response: Mitigation for paleontological resources is included in the standard mitigation section presented in Vol. 1, Page 1-67, measure "q".

30.32 Response: Revised pages (Vol. 2, pages 8.3-3B and 8.3-4) containing changes (underlined) included in Addendum.

30.33 Response: Figure 8.2-12 is a generalized portrayal of vegetation in the regional setting. The pinyon-juniper and cold desert types were inadvertently left off. However, the analysis is not affected by this omission and no change will be made.

30.34 Response: Comment noted; revised pages containing changes (underlined) included in Addendum.

30.35 Response: Comment noted; shading is less distinct than preferable, however, the difference is discernible.

30.36 Response: Although the transmission line would cross desert tortoise habitats, it would pass north of the critical habitat designated by the USFWS for the endangered population of desert tortoises on the Beaver Dam Slope. However, desert tortoise habitat in Utah is considered important, whether designated as "critical" or not. Possible impacts to desert tortoise may be mitigated by measure 8.E-b and c on Page 8.4-1 in Vol. 2.

Although Gambel's quail habitats would be crossed by the transmission line no significant impacts have been identified and are not mentioned.

Big game range inventories conducted by the Utah Division of Wildlife Resources identify no critical deer winter range (concentration areas) along the transmission line route between Paragonah and St. George substations (UDWR, 1968).

30.37 Response: The environmental profiles were intended to indicate only the "important" impacted animal life habitats. The notations on the profiles should be as follows:

a. A, Pa, and PA-YL indicated year-long pronghorn antelope habitat. No significant impact was identified to antelope and this designation should be deleted.

b. O-YL indicates year-long deer habitat. No major impacts to deer in these areas were identified and this designation should be deleted.

c. O-W denoted critical deer winter range and corresponds to O in the profile legend.

d. SG indicates a sage grouse concentration area and corresponds to S in the profile legend.

e. C and E should be deleted.

These changes are on fold-out profiles and will not be reprinted. We would appreciate you making these changes on the affected page.

30.38 Response: Comment noted; revised page containing change (underlined) included in Addendum.

30.39 Response: Comment noted; revised page (Vol. 2, Page 8.2-23) containing change (underlined) in Addendum.

30.40 Response: Comment noted; revised page containing change (underlined) included in Addendum.

30.41 Response: Comment noted; revised page containing change (underlined) included in Addendum.

30.42 Response: No critical wildlife habitat has been identified at the borrow sites.

30.43 Response: The length of disturbance and the actual area disturbed by transmission lines construction would be very small compared to the total habitat available to quail. Therefore, the impact of the lines on Gambel's quail is not expected to be significant.

30.44 Response: Transmission lines would be at least a mile away from any known sage grouse strutting grounds. The major impact to sage grouse would be disturbance to those areas if construction proceeded during the breeding season. Those impacts would be mitigated by timing of construction; to allow no construction activities during the breeding season. Impacts to deer have also been mitigated by not allowing construction activities while deer are on the winter ranges.

30.45 Response: Comment noted; revised page showing deletion (arrow) included in Addendum.

30.46 Response: Page 8.8-16 is merely a figure showing the Conner's Pass route. No environmental components are shown on this figure. In Vol. 2, Page 8.8-38 (Black Rock Alternative route) no signficant impacts to animal life were identified.

30.47 Response: Comment noted; revised page (Vol. 1, Page 3-8) showing deletion (arrow) included in Addendum.

The EPA has not provided formal guidance for visibility modeling analyses or regulations with which to assess the significance of identified impacts.

30.48 Response: The literature on alternative energy sources is voluminous (see Energy Alternatives: A Comparative Analysis, prepared by University of Oklahoma for the Council on Environmental Quality and other Federal agencies, 1975). Many of the proposals have merit singly and in combination. However, few of the proposals are under the control of the applicants, although IPP may encourage the study of alternatives.

As far as the IPP project is concerned, alternative energy sources and energy conservation measures would show up as a leveling off or a reduction in load growth, either as the first units are constructed or after the plant is fully in operation. These measures would have the greatest effect in reducing the size of or the need for the next generation of power plants.

30.49 Response: The Utah Geological Survey has been deleted from the list of nongovernmental organizations presented in the Attachment to the Summary located in the front of the FES.

30.50 Response: According to the list signed by those who attended this scoping meeting, no representatives from the State of Utah were present. However, other meetings were held to discuss issues to be addressed by the environmental statement at which the State of Utah was well represented.

30.51 Response: Comment noted; revised page (Vol. 2, Page 8.3-23) containing change (underlined) included in Addendum.

30.52 Response: The summary was intended to include only significant unavoidable adverse impacts. Significant impacts to deer winter range or other wildlife use areas were mitigated by measures 8-4 and 5 of Chapter 4 (Vol. 1) and measures 2.b and c of section E (Vol. 2). The summary narrative in the FES comparing the Salt Wash site and Lynndyl alternative can be used as a comparison table.

ARIZONA GAME & FISH DEPARTMENT

2222 West Greenway Road Phoenix, Arizona 85023 942-3000

September 10, 1979

Mr. Larry Oldroyd
Environmental Officer
Bureau of Land Management
Richfield District Office
150 East 900 North
Richfield, Utah 84701

Re: Salt Wash Proposal - I.P.P.
Draft Environmental Statement

Dear Mr. Oldroyd:

The Arizona Game and Fish Department has reviewed the above-referenced Draft E.S. and we offer the following comments.

As discussed in the E.S., there are two proposed sites for the Intermountain Power Project plan -- the Salt Wash preferred site and the alternative location at Lyndyl. Both sites require the construction of two 500 kv d.c. transmission lines. However, only the Salt Wash proposal would involve a powerline alignment that would affect any Arizona land.

As delineated in the Salt Wash proposal, the southernmost 500 kv alignment will cross the extreme northwest corner of Mohave County -- crossing Cedar Wash and the Arizona portion of the Beaver Dam Mountains. This line will apparently follow an existing corridor now occupied by the Navajo-McCullough line, constructed in 1975. Approximately ten miles of the alignment will cross Arizona, with a total of nearly 61 acres of habitat being directly impacted or disturbed (6.048 acres per mile).

The existing transmission line corridor passes through a Desert Tortoise (Gopherus agassizi) study area, and an area of potential bighorn sheep habitat. Some adverse impacts to the desert tortoise and to the ongoing study are anticipated, however, they are not expected to be significant. Adverse impact to the bighorn habitat presently unoccupied, would be minimal.

To minimize disturbance and habitat destruction, the Department recommends that the construction company, wherever possible, use the same access roads and staging areas already in existence. Additionally, we support the mitigating measures outlined in the D.E.S., particularly those features listed in 1, 2, 4e, 5 and 7.

We appreciate the opportunity to review and provide comments on this proposed project.

Sincerely,

Robert A. Jantzen, Director

Robert K. Weaver
Habitat Evaluation Coordinator
Planning and Evaluation Branch

RKW:dd

cc: Wes Martin, Supervisor, Region III
State Clearinghouse, 79-80-0053

31.1 Response: Your comments have been noted.

9-111

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VIII
1860 LINCOLN STREET
DENVER, COLORADO 80295

SEP 13 1979

Ref: 8W-EE

Mr. Robert E. Anderson
Acting State Director
Bureau of Land Management
Utah State Office
136 E. South Temple
Salt Lake City, Utah 84111

32

Dear Mr. Anderson:

We have reviewed the draft environmental impact statement on the proposed Intermountain Power Project. Our comments are directed to the Lynndyl site alternative. Because of the very adverse environmental impacts associated with the Salt Wash site we find that alternative environmentally unacceptable. If the Salt Wash site were selected as the preferred alternative in the final EIS, we would recommend referral of the project to the President's Council on Environmental Quality based on the air quality violations and the other adverse impacts that could be mitigated by another site selection.

This office is in the process of reviewing the PSD permit application for the IPP project at the Lynndyl site. Until that review is completed, we will not make any definitive comments on air quality. However, according to the information in the EIS, air quality violations will probably not be a problem with the Lynndyl site.

According to the EIS, much of the capacity of the IPP plant is effectively to be used to maintain reserve margins over the peak demand. Lowering the peak demand would therefore lower the generating capacity needed. The EIS should discuss the methods to reduce peak demand and the reductions in generating capacity that would result. Conservation and load management are the principal ways to reduce peak demand. The discussion on conservation in the EIS is limited to pointing out that the future demand projections have factored in conservation to the extent that it is currently being practiced on a voluntary basis. It's very probable that the voluntary conservation measures taken to date represent a small fraction of the potential energy savings to be gained by a more aggressive conservation program. Load management is not discussed in the EIS. A substantial reduction in generating capacity can be achieved by managing loads to reduce peak demand.

9-112

Page 2

Additional conservation efforts and load management would reduce the amount of generating capacity needed by the IPP participants, and a smaller power plant could be built. Alternatively, and in recognition of economies of scale and the difficulties in siting new power plants, the power not needed by the present participants could be sold to other municipalities or utilities. If future needs by the IPP participants are reduced by conservation and load management, would it be contractually possible for other municipalities or utilities to buy into the project?

Thank you for the opportunity to review and comment on this draft impact statement. In accordance with our procedure to categorize the nature of our comment letter, these comments have been assigned an LO-2. Briefly, this indicates that we do not object to the project provided the Lynndyl site is selected and that an analysis on reducing peak demand should be included in the final EIS. Please feel free to contact our agency if you have any questions regarding our comments.

Sincerely yours,

Roger A. Williams
Regional Administrator

cc: Don Pendleton, Richfield District Manager

32.1 Response: The purpose of load management is to reshape the load duration curve. Authority to require load management must come from local, State, or Federal legislative bodies. Once this authority is established, then the responsibility to implement these programs would be directed to the utilities.

The Southern California participants in IPP are subject to State-wide load management programs in accordance with the California Administrative Code, Title 21. These programs include 1) residential load management programs for air conditioners and water heaters, 2) rate restructuring on long-term marginal costs, 3) swimming pool filter pump management program, and 4) commercial load management which requires conservation surveys. These programs will be phased in by the utilities as long as they meet the following criteria:

1) Change the shape of the load duration curve
2) Technologically feasible
3) Cost effective

The California utilities are continuing to implement these programs and to evaluate them on the basis of the criteria above.

These load management programs are included in forecasts of the Southern California participants in IPP. Additional load management programs would be implemented in the future by any or all of the participants as authorized by the appropriate regulatory bodies.

Load mangement in Utah and California is discussed in Transcript 18 Response 2 and Letter 26 Response 4.

STATE OF NEVADA
GOVERNOR'S OFFICE OF PLANNING COORDINATION
CAPITOL COMPLEX
CARSON CITY, NEVADA 89710
(702) 885-4865

33

September 7, 1979

Donald L. Pendleton
District Manager
U.S. Department of the Interior
Bureau of Land Management
Richfield District Office
150 E. 900 North
Richfield, Utah 84701

RE: SAI NV #80300008 Project: IPP - Volumes I, II, III

Dear Mr. Pendleton:

Attached are the comments from the following affected State Agencies: the Department of Transportation and the Divisions of Colorado River Resources, State Parks, Environmental Protection and Water Resources concerning the above referenced project.

These comments constitute the State Clearinghouse review of this proposal. Please address these comments in the final or summary report.

Sincerely,

Mike Nolan for
Robert M. Hill
State Planning Coordinator

RMH:md

Enclosures

Response: No response required.

9-113

ROBERT LIST
GOVERNOR

DUANE R. SUDWEEKS
ADMINISTRATOR

STATE OF NEVADA
DIVISION OF COLORADO RIVER RESOURCES

ADDRESS REPLY TO
P.O. BOX 19065
LAS VEGAS, NEVADA 89119

TELEPHONE (702) 732-7700

OFFICE ADDRESS
4220 MARYLAND PARKWAY
BUILDING B, SUITE 310
LAS VEGAS, NEVADA 89109

August 14, 1979

Memorandum

To: Robert Hill, State Planning Coordinator

From: Administrator, Division of Colorado River Resources

Subject: Inter-Mountain Power Project (IPP) Draft Environmental Statement - Volumes I, II and III

The Division of Colorado River Resources, acting as the State's agent, is a party to an Agreement with the United States for the purchase of approximately 105,000 acres of Federally owned land in the Eldorado Valley which lies immediately south of U. S. Highway 93, between Henderson and Boulder City, Nevada. The Division, therefore, has a direct interest in the IPP impact to the extent that the Project related transmission system corridors cross that portion of the Valley.

The Division has had prior discussions in this regard with representatives of Nevada Power Company and those California utilities interested in the IPP transmission facilities. The environmental statement specifically provides that the transmission system corridors through that portion of the Valley covered by the Purchase Agreement will parallel existing power line corridors and we therefore have no adverse comment on the subject environmental statement.

Duane R. Sudweeks

cc: Noel A. Clark, Director, Dept. of Energy

Response: Comment noted.

A DIVISION OF THE DEPARTMENT OF ENERGY

NOEL A. CLARK, DIRECTOR

NEVADA STATE CLEARINGHOUSE REVIEW FORM

PLANNING COORDINATO
GOVERNOR'S OFFICE
CAPITOL COMPLEX
CARSON CITY, NEVADA
885-4865

TO:

- ☐ Conservation & Natural Resources
- ☑ Human Resources
- ☑ Fish and Game
- ☐ Budget
- ☑ Historic Preservation & Archeology
- ☑ Agriculture
- ☐ Community Services Agency
- ☐ Commerce
- ☑ Public Service Commission
- ☐ Employment Security Department
- ☑ Energy CDR
- ☐ Law Enforcement Assistance
- ☐ Taxation
- ☐ Equal Rights Commission
- ☑ Economic Development (FC/IC)
- ☑ O.P.C. Sparks

2-26-79
Date

FROM: Bob Hill, State Planning Coordinator

SAI NV # 80300008 PROJECT: IPP- vol I, II, III

Attached for review and comment is a copy of the aforementioned project. *PLEASE* evaluate it with respect to:

1) the program's effect on your plans and programs
2) the importance of its contribution to State and/or Areawide goals and objectives
3) its accord with any applicable law, order or regulation with which you are familiar
4) additional considerations.

PLEASE submit your comments to this office NO LATER THAN Sept 1, 1979 by checking the appropriate box below and returning the form to this office. *Please do so even if you have no comment* on this particular project so that we may complete our processing.

THIS SECTION TO BE COMPLETED BY REVIEWING AGENCY (Dept. of Transportation)

- ☐ No comment on this project
- ☐ Proposal supported as written (see below)
- ☐ Additional information (see below)
- ☐ Conference desired (see below)
- ☑ Conditional support (outlined below)
- ☐ Disapproval/denial of funding (must specify reason below)

Comments: *(use additional sheets if necessary)*

1 The applicants attention is directed to NRS 408.955 which requires plans review and approval for any work proposed within the Highway right-of-way. Occupancy permits will also be required where prior rights have not been established. Contact the District Engineer in the District where work is contemplated for permits. This project should be subject to permits for any State Highway crossings or laterals. It should also be subject to any material site under approved application from the B.L.M.

Program Engineer — 885-5610 — 20 Aug 79

Title — Phone — Date

801.6b(1)

RECEIVED
AUG 23 1979
Department of Conservation and Natural Resources

NEVADA

DIVISION OF STATE PARKS

MEMO

TO Roland Westergard

FROM Jay Melerdierck

SUBJECT DRAFT IPP, SAI NV #80300008
INTERMOUNTAIN POWER PROJECT

DATE 8/20/79

The Nevada Division of State Parks has reviewed the Draft EIS for I.P.P. (3 volumes) and offers the following comments regarding outdoor recreation, conservation and open space needs, and state parks. Our review is based on the information provided in the draft EIS and we reviewed only those aspects affecting Nevada.

The Power Transmission System would have the following impacts on recreation and conservation in Nevada.

1. The transmission system would pass through or adversely impact the following major recreation attractions:

2.
Cave Lake State Park
Ward Charcoal Ovens State Parks
Echo Canyon State Recreation Area
Cathedral Gorge State Park
Lake Mead National Recreation Area
Virgin River Recreation Lands
Commins Lake
Sunrise Mountain
Frenchman Mountains
Desert National Wildlife Range
Pahranagat National Wildlife Range
Paneas Charcoal Kilns
Mahogany Mountains
Highland Mountains
Muddy Mountains
Rainbow Gardens
Mt. Moriah Unit, Humboldt National Forest
Wheeler Peak Unit, Humboldt National Forest
Snake Range Natural Landmark
Las Vegas Wash
McCullough Mountains
Las Vegas Dunes Recreation Lands

In addition, we have inventoried numerous minor recreational areas such as picnic sites, camping areas, creeks, fishing, hunting, sightseeing, off-highway vehicle use, rock collecting, etc., that the power lines would impact.

2. Construction and maintenance activities associated with the transmission lines could damage or destroy prehistoric and historic sites. There are 170 sites that have been identified along the proposed routes in Nevada. Seventy-one of these sites are included or meet the criteria for inclusion in the National Register of Historic Places. For example, the introduction of visual elements (transmission lines, poles) out of character with the Caliente Railroad Depot (registered site) would detract from the historic setting of this site.

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AUG 23 1979
Department of Conservation and Natural Resources

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AUG 23 1979
Department of Conservation and Natural Resources

a division of the Department of Conservation and Natural Resources

3. The power transmission system would pass near or border 12 wilderness study areas (WSA) or roadless units identified by BLM. It would also pass near the Desert National Wildlife Range proposed wilderness area.

4. The proposed system would cross approximately 35 miles of critical deer habitat winter range, 15 miles of bighorn sheep habitat, 35 miles of sage grouse habitat, 45 miles of Desert Tortoise (designated as rare in Nevada and under Federal Status Review) habitat, 152 miles of Gila Monster (unique and uncommon designation) habitat, and 50 miles of raptor concentrations. Construction activities would destroy burrows and nests of the Desert Tortoise, Gila Monsters, and other species.

5. The system would cross approximately 51 miles of Joshua Tree forest in Nevada.

6. The presence of large power lines will cause a reduction in the quality of recreational experience for visitors and driving for pleasure. There could be five 500 kv lines running parallel from near Apex to the Eldorado substation, six 500 kv lines parallel from Eldorado going west, and four 500 kv lines from Eldorado going southwest. The average daily travel of highways and visual impacts are listed on page 3-21. There will be the following impacts on existing and proposed scenic highways in Nevada.

   a. The road up Meadow Valley Wash (proposed Rainbow Canyon Scenic Parkway) would cross under three 500 kv lines.

   b. Lake Mead Boulevard (67) would pass under up to five 500 kv lines.

   c. New powerlines would pass over the Ward Charcoal Ovens road (50).

   It would also create a "tunnel effect" for 45 miles in combination with the existing transmission line on U.S. 93, Apex to Pahranagat.

7. The disturbed soil and vegetation areas are projected to take 10-20 years in cold desert areas and 30 years in the hot desert areas to stabilize and revegetate. The projected life of the IPP project is 35 years (p. 1-6).

8. Salinity in the Colorado River would be increased (0.6 milligrams per liter), while at the same time desalination programs are underway on other parts of the Colorado River that will adversely affect existing recreation.

9-115

9. The power transmission system will directly impact the following Natural Heritage sites:

   a. Rainbow Gardens and Gypsum Cave were recently recommended by the Great Basin review panel for nomination for national registration. This area will be bisected by up to five parallel 500 kv lines. Rainbow Gardens is nationally significant because of its stratogrific layering that is now vertical rather than horizontal. The colorful layering represents from pre-cambrian to mesozoic periods (a broader range than in the Grand Canyon). This area is also an excellent interpretive example of faulting. Gypsum Cave is one of the largest known caves in Gypsum, it is also a Registered National Historic Landmark.

   b. The McCullough Mountains were also nominated by the Great Basin Board for National Natural Register Landmark status. One existing 500 kv line goes through McCullough Pass but with the IPP and Allan-Warner projects, up to six parallel 500 kv lines could go through this area.

   c. Las Vegas Marsh (Wash) will also be crossed by up to five 500 kv lines. It is a very valuable wildlife habitat, special ecosystem and recreational area. It is probably the most productive area, biologically, in Nevada, with 267 species of birds and other wildlife.

   d. The Paiute Valley Natural Area is the best example of Joshua trees in Nevada. This areas is being considered for an alternate route for power transmission.

   e. The Lynndyl Site Transmission System, if selected, will directly impact the Snake Range. The Snake Range was recommended for registration as a National Natural Landmark by the Great Basin review board. The Snake Range site includes portions of the Mt. Moriah and Wheeler Peak units of Humboldt National Forest and Sacramento Pass between the two units.

10. The power transmission system will reduce the recreational enjoyment of off-highway vehicle and trail use by visually impacting areas of concentrated use. The Nevada State-wide Trails Study proposed trails in Clark and Lincoln counties that would conflict with powerline corridors.

11 The Lynndyl Site Transmission System would conflict with one of four sites being considered for the Great Basin National Park. The Snake Range and Spring Valley areas have in the past received state and federal recommendations for designation as the Great Basin National Park. The recommendation of the current study team should be available in the fall of 1979.

2

Because of these impacts we would make the following recommendations:

3 a. Alternative transmission system routing be developed that avoids the Rainbow Gardens, McCullough Mountains, and Las Vegas Wash natural areas, and as many as possible of the recreational areas listed in paragraph #1 above.

b. The Lynndyl Site Transmission System not be adopted or if adopted rerouted around the Snake Mountain Range.

4 c. When the applicant prepares the photographic simulations of areas where transmission lines will impact high scenic quality or areas of high sensitivity as proposed in Volume 1, p. 4-5, #8, the Nevada Division of State Parks be one of the agencies to evaluate and approve measures of mitigation on sites in Nevada prior to construction.

Additional Comments

The discussion of interrelationship with other projects and proposals should include the entire interstate importation of energy (electrical) to serve the Southern California urban area. For instance, there is proposed a power plant near Ely, Nevada, that will primarily serve the Southern California area, yet Mt. Wheeler Utility Company is importing 35 MW from the IPP.

5

The Harry Allan power plant (near Las Vegas) and the IPP are both projected to be operational in 1986 to serve the greater Los Angeles area. Are they both needed at that time?

The estimated annual tax revenue from the transmission lines in Nevada is only $941.00.

JM:ba

9-716

August 28, 1979

MEMORANDUM

TO: Pete Morros, Assistant Director

FROM: Environmental Protection

SUBJECT: SAI# 80300008 IPP - Vol I, II, III

In reference to the above project, the Division of Environmental Protection staff has the following comments:

AIR

Dick Serdoz: The project does not appear to require additional land in Nevada. The project may have a secondary impact on Nevada from the majority of the electrical power used in southern California area. This additional energy used may enable growth which may impact the ambient air quality entering southern Nevada on the western border. The addtional growth associated with this project will have to be a part of the SCAB non-attainment plan, submitted for approval which demonstrated the attainment and maintenance of the Federal Ambient Air Quality Standards.

6

WATER

Wendell McCurry: No comment.

SOLID WASTE

Vern Rosse: No comment.

kh

ROLAND D. WESTERGARD
Director

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES
Capitol Complex
201 South Fall Street, Carson City, Nevada 89710

WILLIAM J. NEWMAN
State Engineer

In reply refer to
No.

August 16, 1979

Address All Communications to
the State Engineer, Division
of Water Resources
Telephone (702) 885-4380

MEMORANDUM

To: Roland D. Westergard, Director

From: William J. Newman, State Engineer — WJN

Subject: SAI NV #80300008 - IPP - VOL. I, II, III

Volume I - Salt Wash Proposal

Project electric generating station proposed to be located at Salt Wash, Wayne County, Utah.

Total of 30,000 acre-feet of water from the Fremont River, a tributary of the Colorado River.

Volume II - Lynndyl Alternative Site

The conversion of water from agricultural use to consumptive use at the Lynndyl, Utah, alternate site could require the retirement of 7,200 to 7,800 acres of irrigated farmland. The Lynndyl alternate site would cause a 9 per cent reduction of water flowing to areas surrounding the Delta, Utah area which could affect wildlife habitat.

Volume III - Project Alternatives, Appendices and References

Alternatives considered included power plant sites in Emery, Grand, Wayne and Millard counties, Utah.

As all proposed power generation sites are located in Utah, this office would have no further comment unless an alternate site is chosen that may affect the Virgin River.

WJN/bc

G-117

G-386

33.1 Response: Comment noted; revised page (Vol. 1, Page 1-82) containing changes (underlined) included in Addendum.

33.2 Response: Except for Paiute Valley, recreational attractions referred to throughout the letter were identified, and visual impacts to these areas were analyzed in the DES on the following pages: Vol. 1, pages 2-58, 2-65, 2-66, 3-32, 3-33, 5-7; Vol. 2, pages 8.2-41, 8.2-47, 8.2-49, 8.3-31, 8.5-5; Vol. 3, pages 10 and 11. Gypsum Cave, Frenchman Mountains, Rainbow Gardens, Las Vegas Wash, and Las Vegas Dunes Recreation Lands were identified and analyzed as part of the Sunrise Mountain area. Mendon Valley Wash was identified and analyzed as part of the Muddy Mountain area. It is noted that 520 acres in the Paiute Valley have been inventoried for possible designation as a National Landmark. However, because no designation has been made, the area was not analyzed in the DES.

Comment 3 notes areas with potential for wilderness designation that were identified and analyzed in the DES on the following pages: Vol. 1, pages 2-70, 2-71, 2-72, 3-32, 3-35, 5-7; Vol. 2, pages 8.2-56, 8.2-57, 8.3-31, 8.3-36, 8.5-5, 8.5-6; Vol. 3, pages 10 through 13.

Comment 6 notes anticipated visual impacts that would occur to State and Federal highways and that have been identified in the DES on the following pages: Vol. 1, pages 3-30, 3-31, 3-32, 5-7; Vol. 2, pages 8.3-29, 8.3-30, 8.3-31, 8.5-5; Vol. 3, pages 10 and 11. Impacts to the Meadow Valley Wash area, the Lake Mead area, and the Ward Charcoal Ovens area (including public access to these areas other than State or Federal highways) were analyzed under recreation attractions in the DES (same reference as paragraph one of this response).

In response to comment 10, the impact that power transmission lines would be visually adverse when visible from areas with recreational value (including ORV values) was identified in the DES, Vol. 1, Page 3-30. Concentrated ORV use areas were one of many types of recreation attractions in the DES (same page reference as paragraph one of this response).

In response to comment 11, it is noted that the Snake Range-Spring Valley area is one of four areas undergoing a Park Service reconnaissance study for possible designation as a Great Basin National Park. Because there is no proposal at this time, Wheeler Peak, Mount Moriah, and portions of Spring Valley have been identified in the DES as recreation attractions and/or areas with potential for special designation. Impacts to these areas have been analyzed in the DES (same page reference as paragraphs one and two of this response).

33.3 Response: Several viable alternative transmission system routings were identified and analyzed in the DES. A combination of alternative routes could avoid visual impact to most recreational attractions. There is no alternative routing in the case of the McCullough Mountains, but the visual impact has been identified as low.

33.4 Response: Comment noted; revised page containing changes (underlined) included in Addendum.

33.5 Response: Environmental interrelationships are discussed in Vol. 1, pages 1-67 and 69. Additional information is also provided on Figure 1-24 and Table 1-16 on this subject. New project proposals such as a power plant near Ely, Nevada lack enough firm detail to initiate study or evaluations concerned with interrelationships with the proposed Intermountain Power Project.

33.6 Response: Forty-two percent of the power generated by IPP would be going to Utah and Nevada participants in the project, with that portion to be used by Nevada being delivered to the Gondor Substation near East Ely. This portion of the electrical power supply has been requested by the Mount Wheeler Power Company of East Ely presumably to meet projected growth. Nevada PUC had to approve expansion of the baseload and purchase of the power. The secondary impacts were considered at that time by Nevada PUC.

ARIZONA
OFFICE OF THE GOVERNOR
BRUCE BABBITT

OFFICE OF
ECONOMIC PLANNING AND DEVELOPMENT

General Offices of OEPAD ● 4th Floor

September 20, 1979

34

Mr. Larry Oldroyd,
Environmental Office
Bureau of Land Management
Richfield District Office
150 East 900 North
Richfield, Utah 84701

Re: Salt Wash Proposal - Intermountain Power Project
Draft Environmental Statement S.A.I. #79-80-0053

Dear Mr. Oldroyd:

Enclosed is a copy of a response concerning a state clearinghouse project which was received by us after our Signoff to you.

Sincerely,

Jo Youngblood

Jo Youngblood, Manager
Intergovernmental Programs

JY:ss
Encl.

9-118

SIGNOFF

OMB Approval No. 29-R0218

FEDERAL ASSISTANCE

2. Applicant's Application: a. Number; b. Date (Year month day)
3. State application identifier
4. a. Number: AZ 79-80-0053
b. Case Assigned: 1979 08 16

1. Type Of Action (Mark appropriate box): ☐ Preapplication ☐ Application ☐ Notification Of Intent (Opt.) ☐ Report Of Federal Action
Leave Blank: SEP 13 1979

4. Legal Applicant/Recipient
a. Applicant Name: Bureau of Land Management
b. Organization Unit: Richfield District Office
c. Street/P.O. Box: 150 East 900 North
d. City: Richfield
e. County:
f. State: Utah
g. Zip Code: 84701
h. Contact Person (Name & telephone no.) Mr. Larry Oldroyd, Environmental Office (801) 896-8221

5. Federal Employer Identification No.

6. Program (From Federal Catalog): a. Number 1 5 • 2 9 9; b. Title Unknown

Department of the Interior, Bureau of Land Management

7. Title and description of applicant's project
SALT WASH PROPOSAL - INTERMOUNTAIN POWER PROJECT - DRAFT ENVIRONMENTAL STATEMENT (3 Volumes)
Proposed construction & operation of a 3,000 megwatt coal fired generating station at the Salt Wash site, Wayne County, Utah, or alternatively at Lynndyl in Millard County, Utah, with 2 - 500 Kilovolt a.c. transmission lines to deliver power to a cooverter station at Victorville, CA. Transmission lines would cross the northwest corner of Arizona in Mohave County.

8. Type of applicant/recipient (A–State, B–Interstate, C–Substate, D–County, E–City, F–School District, G–Special Purpose District, H–Community Action Agency, I–Higher Education Institution, J–Private Institution, K–Indian Tribe, L–Other): Federal Agency (Specify) — Enter appropriate letter

9. Type of assistance (A–Basic Grant, B–Supplemental Grant, C–Loan, D–Insurance, E–Other): Enter appropriate letter(s)

10. Area of project impact (Names of cities, counties, states, etc.): Mohave County, Arizona

11. Estimated number of persons benefiting

12. Type of application: A–New, B–Renewal, C–Revision, D–Continuation, E–Augmentation: Enter appropriate letter

13. Proposed Funding

a. Federal	$ .00
b. Applicant	.00
c. State	.00
d. Local	.00
e. Other	.00
f. Total	$ .00

14. Congressional Districts Of: a. Applicant; b. Project 03

15. Type of change (For 12c or 12e): A–Increase Dollars, B–Decrease Dollars, C–Increase Duration, D–Decrease Duration, E–Cancellation, F–Other (Specify): Enter appropriate letter(s)

16. Project Start Date (Year month day)
17. Project Duration (Months)
18. Estimated date to be submitted to federal agency (Year month day)
19. Existing federal identification number

20. Federal agency to receive request (Name, city, state, zip code)

21. Remarks added ☐ Yes ☒ No

Section II: Clearinghouse Review

22. The Applicant Certifies That
a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved.
b. If required by OMB Circular A-95 this application was submitted pursuant to instructions therein, to appropriate clearinghouses and all responses are attached:
(1) Arizona State Clearinghouse
(2) Region IV Clearinghouse (District IV COG)
(3)
No Response / Response attached

Section III: Federal Action

23. Certifying representative
a. Typed name and title
b. Signature
c. Date signed (Year month day) 19

24. Agency name

25. Application received (Year month day) 19

26. Organizational Unit

27. Administrative office

28. Address

29. Federal application identification

30. Federal grant identification

31. Action taken
☒ a. Awarded
☐ b. Rejected
☐ c. Returned for amendment
☐ d. Deferred
☐ e. Withdrawn

32. Funding

a. Federal	$ .00
b. Applicant	.00
c. State	.00
d. Local	.00
e. Other	.00
f. Total	$ .00

33. Action date (Year month day) 19

34. Starting date (Year month day) 19

35. Ending date (Year month day) 19

36. Contact for additional information (Name and telephone number)

37. Remarks added ☐ Yes ☐ No

38. Federal agency A-95 action
a. To issuing above action, any comments received from clearinghouse were considered. If agency response is due under provisions of Part 1, OMB Circular A-95, it has been or is being made.
b. Federal Agency A-95 Official (Name and telephone number)

424-101

Standard Form 424 Page 1 (10-79)
Prescribed by GSA, Federal Management Circular 74-7

Dr. Suzanne Dandoy, Director
Department of Health Services
1740 West Adams Street
Phoenix, Arizona 85007

State Application Identifier (SAI)
AUG 17, 1979 State AZ No. 79-80-0053

Transportation
OEPAD: M. Lane ✓
Game & Fish
Indian Affairs ✓
Energy Programs
Mineral Resources
Museum of Northern Arizona
Renewable Natural Resources
Bu. of Geology & Mineral Tech.
Center for Public Affairs

Power ✓
Health ✓
Parks
Land

Region III ✓
Region IV ✓

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to:

(1) the program's effect upon the plans and programs of your agency
(2) the importance of its contribution to State and/or areawide goals and objectives
(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

Please return THIS FORM AND ONE XEROX COPY to the clearinghouse no later than 17 working days from the date noted above. Please contact the clearinghouse if you need further information or additional time for review.

☒ No comment on this project
☐ Proposal is supported as written
☐ Comments as indicated below

Comments: (Use additional sheets if necessary)

Reviewer's Signature R. Bruce Scott
Title ASSISTANT DIRECTOR FOR HEALTH SERVICES
Date AUG 22 1979
Telephone

Andy Sandoval, Exec. Director
NACOG, Region III
119 E. Aspen St.
Flagstaff AZ 86001

State Application Identifier (SAI)
AUG 17, 1979 State AZ No. 79-80-0053

Transportation
OEPAD: M. Lane
Game & Fish
Indian Affairs
Energy Programs
Mineral Resources
Museum of Northern Arizona
Renewable Natural Resources
Bu. of Geology & Mineral Tech.
Center for Public Affairs

Power
Health
Parks
Land

Region III
Region IV

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to:

(1) the program's effect upon the plans and programs of your agency
(2) the importance of its contribution to State and/or areawide goals and objectives
(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

Please return THIS FORM AND ONE XEROX COPY to the clearinghouse no later than 17 working days from the date noted above. Please contact the clearinghouse if you need further information or additional time for review.

☒ No comment on this project
☐ Proposal is supported as written
☐ Comments as indicated below

Comments: (Use additional sheets if necessary)

Reviewer's Signature Jacqueline J. Green for
Title Andy Sandoval, Executive Director, NACOG
Date
Telephone 9-4-79
774-1895

9-119

FORM TO BE COMPLETED BY REVIEWING AGENCY

TO:

Mr. Les Ormsby, Admin.
Arizona Power Authority
1810 West Adams Street
Phoenix, Arizona 85005

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

State Application Identifier (SAI)

AUG 17, 1979 State AZ No. 79-80-0053

Transportation
OEPAD: M. Lane
Game & Fish
Indian Affairs
Energy Programs
Mineral Resources
Museum of Northern Arizona
Renewable Natural Resources
Bu. of Geology & Mineral Tech.
Center for Public Affairs

Power
Health
Parks
Land

Region III
Region IV

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(1) the program's effect upon the plans and programs of your agency
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(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

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Please contact the clearinghouse if you need further information or additional time for review.

☒ No comment on this project
☐ Proposal is supported as written
☐ Comments as indicated below

Comment: (Use additional sheets if necessary)

Reviewer's Signature Les Ormsby Date 8-22-79

Title Telephone

9-120

TO:

Frank G. Servin, Exec. Dir.
District IV Council of Gov'ts.
1020 Fourth Ave., Suite 201
Yuma, AZ 85364

State Application Identifier (SAI)

AUG 17, 1979 State AZ No. 79-80-0053

Transportation
Land
OEPAD: M. Lane

Region IV

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

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(1) the program's effect upon the plans and programs of your agency
(2) the importance of its contribution to State and/or areawide goals and objectives
(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

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Please contact the clearinghouse if you need further information or additional time for review.

☒ No comment on this project
☐ Proposal is supported as written
☐ Comments as indicated below

Comments: (Use additional sheets if necessary)

Reviewer's Signature Frank G. Servin Date 8-27-79

Title Executive Director Telephone 782-1886

To:

Margaret Lane
OEPAD
1700 W. Washington, Rm. 505
Phoenix, Arizona 85007

State Application Identifier (SAI)

AUG 17, 1979 State AZ No. 79-80-0053

Transportation Region IV
Land
OEPAD: M. Lane

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to:

(1) the program's effect upon the plans and programs of your agency
(2) the importance of its contribution to State and/or areawide goals and objectives
(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

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☐ No comment on this project
☐ Proposal is supported as written
☐ Comments as indicated below

Comments: (Use additional sheets if necessary)

No Comment.

Reviewer's Signature: Margaret M. Lane Date:

Title: Telephone:

9-121

To:

Mr. Clinton M. Pattea
Executive Secretary
Indian Affairs Commission
1645 West Jefferson St.
Phoenix, AZ 85007

State Application Identifier (SAI)

AUG 17, 1979 State AZ No. 79-80-0053

Transportation Power,
OEPAD: M. Lane Health
Game & Fish Parks
Indian Affairs Land
Energy Programs
Mineral Resources
Museum of Northern Arizona
Renewable Natural Resources
Bu. of Geology & Mineral Tech.
Center for Public Affairs

Region III
Region IV

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

This project is referred to you for review and comment. Please evaluate as to:

(1) the program's effect upon the plans and programs of your agency
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(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

Please return THIS FORM AND ONE XEROX COPY to the clearinghouse no later than 17 working days from the date noted above. Please contact the clearinghouse if you need further information or additional time for review.

☒ No comment on this project
☐ Proposal is supported as written
☐ Comments as indicated below

Comments: (Use additional sheets if necessary)

Reviewer's Signature: Date: 9-5-79

Title: Telephone:

TO:

Joe F. Fallini, Commissioner
State Land Department
1624 West Adams, 4th Fl.
Phoenix, AZ 85007
ATTN: Jeff Yaeger

State Application Identifier (SAI)
AUG 17, 1979 State AZ No. 79-80-0053

- ✓Transportation
- ✓OEPAD: M. Lane
- Game & Fish
- ✓Indian Affairs
- ✓Energy Programs
- ✓Mineral Resources
- ✓Museum of Northern Arizona
- ✓Renewable Natural Resources
- ✓Bu. of Geology & Mineral Tech.
- Center for Public Affairs
- ✓Power
- ✓Health
- ✓Parks
- ✓Land

✓Region III
✓Region IV

From: Arizona State Clearinghouse
1700 West Washington Street, Room 505
Phoenix, Arizona 85007

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(1) the program's effect upon the plans and programs of your agency
(2) the importance of its contribution to State and/or areawide goals and objectives
(3) its accord with any applicable law, order or regulation with which you are familiar
(4) additional considerations

Please return THIS FORM AND ONE XEROX COPY to the clearinghouse no later than 17 working days from the date noted above. Please contact the clearinghouse if you need further information or additional time for review.

- ☐ No comment on this project
- ☐ Proposal is supported as written
- ☒ Comments as indicated below

Comment: (Use additional sheets if necessary)

The Laws Department will address specific issues if and when applicant applies for Certificate by Power Plant and Transmission Line Siting Committee.

6-122

Reviewer's Signature: Jeff Yaeger Date: 9/13/79

Title: Telephone:

34.1 Response: Very serious consideration was given to the Lynndyl site as an alternative to Salt Wash. This happened only after the Governor of Utah established the Interagency Task force on Power Plant Siting as part of an effort to identify alternative power plant sites for IPP. Their environmental assessments and report of 13 power generating sites indicated that the Lynndyl alternative site had the fewest projected environmental impacts of the sites studied.

Dr. James Becker
Center for Public Affairs
Arizona State University
Tempe, Arizona 85281

State Application Identifier (SAI)
AUG 17, 1979 State AZ No. 79-80-0053

- Transportation
- OEPAD: M. Lane
- Game & Fish
- Indian Affairs
- Energy Programs
- Mineral Resources
- Museum of Northern Arizona
- Renewable Natural Resources
- Bu. of Geology & Mineral Tech.
- Center for Public Affairs
- Power
- Health
- Parks
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Region III
Region IV

From: Arizona State Clearinghouse
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(1) the program's effect upon the plans and programs of your agency
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- ☐ No comment on this project
- ☐ Proposal is supported as written
- ☒ Comments as indicated below

Comment: (Use additional sheets if necessary)

1. Evidence of serious considerations of alternatives is not displayed.
2. Economics of the single-site generating plant is not completely considered. Transmission losses and other costs will become increasingly intolerable. Justification of separation of costs and benefits is not shown.

Reviewer's Signature: R. J. Becker Date: 9-18-79

Title: RX Prof. Center for Public Affairs Telephone: 965-3926

A compilation of the Governor's Siting Committee reports are available at the BLM Richfield District Office.

34.2 Response: Cost/benefit analyses are considered in the ultimate decision making process.

McDOUGAL, HALEY & DAHL
Attorneys at Law
250 EAST BROADWAY - SUITE 350
SALT LAKE CITY, UTAH 84111
(801) 322-1556

35

DENNIS E. DAHL
BRYAN L. McDOUGAL
GEORGE MALEN HALEY III

September 5, 1979

Mr. Don Pendleton
Richfield District Officer
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

Re: Draft Environmental Statement -
Lynndyl Alternative Site
Intermountain Power Project

Dear Sir:

Enclosed find my comments regarding the Draft Environmental Statement, Lynndyl Alternative Site, Intermountain Power Project. My comments are directed to the issue of the sufficiency of the discussion regarding alternative methods of coal transportation. The analysis given is deliberately brief. My concern is only to highlight the legal requirements of NEPA in discussing alternatives and call for more detailed analysis of two alternatives, coal slurry and penumatic pipeline.

The enclosure was prompted by a short article in the Salt Lake Tribune, August 18, 1979 which states in its entirety:

MULL SLURRY PIPELINE

A coal slurry pipeline is under consideration to carry fuel from Carbon-Emery to the proposed Intermountain Power Project plant near Lynndyl, Millard County, instead of rail transportation, Joseph C. Fackrell, IPP president, said Friday.

The draft environmental impact statement on the power project covered rail transportation only. But the IPP board, in a meeting at Snowbird on Thursday, authorized the staff to assemble information for a study on the coal-slurry alternative, according to Mr. Fackrell.

The fact that a coal slurry pipeline is under consideration raises two issues regarding the NEPA process. First, the development of a major change to the proposal after publication of the draft statement can result in litigation along the lines of NRDC v. Hughes. Second, the sufficiency of the discussion of

9-123

alternative means of coal transportation in the particular context of the Lynndyl Alternative.

Admittedly, the IPP staff has only been instructed to "assemble information" for a study of a coal slurry pipeline. Nevertheless, I believe the enclosed comments may prove useful in the preparation of a legally acceptable final statement.

Very truly yours,

McDOUGAL, HALEY & DAHL

STANLEY W. PARKER
Attorney at Law

SWP:le

enc.

Enclosure included in original letter file.

35. Response: A coal slurry pipeline is not a part of the IPP proposal. The Lynndyl proposal is to have coal on an existing mainline railroad with the addition of a newly constructed spur into the plant.

The coal source for the subject power plant is currently unknown, as is the location, timing, and design of a slurry pipeline not yet proposed. Therefore, evaluation and analysis in such definitive terms is impossible at this time. Should such a system be proposed, by IPP, it would be evaluated and analyzed to fully comply with NEPA.

The text in Vol. 1, Page 8-5 and Vol. 2, Page 8.8-1 have been changed to reflect this information. Revised pages containing changes (underlined) included in Addendum.

OFFICE OF THE SECRETARY
RESOURCES BUILDING
1416 NINTH STREET
95814

(916) 445-5656

Department of Conservation
Department of Fish and Game
Department of Forestry
Department of Navigation and Ocean Development
Department of Parks and Recreation
Department of Water Resources

EDMUND G. BROWN JR.
GOVERNOR OF
CALIFORNIA

36

Air Resources Board
California Coastal Commission
California Conservation Corps
Colorado River Board
Energy Resources Conservation and Development Commission
Regional Water Quality Control Boards
San Francisco Bay Conservation and Development Commission
Solid Waste Management Board
State Coastal Conservancy
State Lands Commission
State Reclamation Board
State Water Resources Control Board

THE RESOURCES AGENCY OF CALIFORNIA
SACRAMENTO, CALIFORNIA

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Action: ____
Info: ____
Discuss ____

State Director
U. S. Department of the Interior
Bureau of Land Management
University Club Building
136 - East South Temple
Salt Lake City, Utah 84111

Dear Sir:

The State of California has reviewed the report concerning the Intermountain Power Project, submitted through the Office of Planning and Research in the Governor's Office. We have received comments from the Departments of Fish and Game (DFG), Conservation, and Parks and Recreation (Office of Historic Preservation), and the State Lands Commission.

DEPARTMENT OF FISH AND GAME

DFG comments that its primary concern regarding this project's impacts in California is the construction of power transmission lines. With regard to the Salt Wash Proposal, DFG recommends selection of the northern corridor.

1 The greatest impact of the project would be the destruction of vegetation. Special efforts should be taken to minimize this impact, especially regarding the riparian vegetation along the Mojave River. Some restoration or revegetation may be required and supplemental watering could be an aid in accomplishing this.

2 The report (Volume 1, page 3-24) mentions possible disruption of bighorn sheep lambing. This is a special concern during construction in the Clark Mountain Range. DFG recommends scheduling construction in this portion of the project during times when bighorn sheep lambing would not be disturbed.

3 Significant impacts could occur to wildlife watering devices installed by DFG, although it is impossible to determine from the maps provided exactly where this might occur. Should a final routing be selected which would result in damage to any of these units, DFG recommends that they be relocated or replaced at project expense.

9-124

DEPARTMENT OF CONSERVATION

The Department comments that the report does not adequately address geologic concerns. The description of the environment should include discussion of the geologic features transversed by the transmission system, with special attention to faults and geologically hazardous terrain. The discussion of impacts should include the 4 effects of access road and tower construction on land stability. The report also should discuss the effectof geologic hazards on the proposed and alternative routes, especially those hazards associated with earthquake shaking and faulting and slope instability. The attached guideline suggests topics which should be addressed.

A comparison of the amount of new transmission system access roads required for the Salt Wash Proposal and for the Lynndyl Alternative 5 Site as described in the text (pages 1-44 and 3.1-29) indicates that the alternative route would disturb less new ground (695 miles for the Salt Wash Proposal, 398 miles for the alternative). Such differences should be mentioned in the comparison of alternatives.

DEPARTMENT OF PARKS AND RECREATION

The Department's Office of Historic Preservation (OHP) is concerned that California is the only state in the project's area of potential impact which has not entered into a Memorandum of Understanding with BLM regarding cultural resources. The report states that a sample 6 inventory of the proposed Southern California transmission line routes has located 274 prehistoric and historic sites; 63 of these are on or eligible for the National Register of Historic Places. Adequate management and protection of these cultural resources will require an agreement at least as detailed as those in the Memoranda of Understanding between BLM and Utah, Nevada, and Arizona.

Any agreement between BLM and the State of California should also include provisions for identification and preservation of properties which are culturally significant to ethnic groups. Specifically, 7 any inventory of cultural resources in the transmission corridors should include an ethnographic overview and evidence of consultation with pertinent Native American groups to locate significant areas which may be impacted by the project.

STATE LANDS COMMISSION

The State Lands Commission staff has reviewed the report and finds that the proposed transmission routes would involve the following 8 State school lands under the Commission's jurisdiction for which

a permit will be required:

1. Southern California System-Preferred Route:

8

Section 16, T.9N, R.7E
Section 36, T.10N, R.7E
Section 16, T.10N, R.8E
Section 36, T.11N, R.8E
Section 16, T13N, R.13E
Section 36, T.17N, R.10E
Section 16, T.17N, R1ME

All within the San Bernardino Meridian.

2. Southern California System-Alternate Route:

Tract 46, T.11N, R.18E, S.B.M.

REVIEW REQUIREMENTS

The State's review, in accordance with Part II of Office of Management and Budget Circular A-95, was coordinated with the Departments of Conservation, Fish and Game, Parks and Recreation, Water Resources, Food and Agriculture, and Health Services; the Air Resources, Solid Waste Management, and State Water Resources Control Boards; and the Energy and State Lands Commissions.

We appreciate having been given an opportunity to review this report.

Sincerely,

James W Burns

JAMES W. BURNS
Assistant Secretary for Resources

cc: Office of Planning and Research
Director of Management Systems
1400 Tenth Street
Sacramento, CA 95814
(SCH 79072503)

Attachment

9-125

State of California — Business and Transportation Agency

Memorandum

To : Ms. Ann Barkley, DOTP
Attention Mr. A. Lightman
A-95 Coordinator

Date: August 24, 1979

File : SCH #79072503P

From : **DEPARTMENT OF TRANSPORTATION**
Mr. J. E. Peddy, District 08

Subject: Salt Wash Intermountain Power Project

We have reviewed the Draft Environmental Statement for the above proposal and offer the following comments:

We support utilities being placed in a common corridor.

Encroachment permits are required prior to the start of any state highway crossings. Sufficient lead time (two to three months) should be allowed for adequate processing of permit requests. Protection will be required over the highway during line installation. Encroachment permits can be obtained from:

8

California Department of Transportation
District 8
247 West Third Street
P. O. Box 231
San Bernardino, CA 92403

If you have any questions, please contact Mr. Harvey Sawyer at (714) 383-4550.

J. E. PEDDY
District Director

S Lisiewicz

By
S. Lisiewicz
Deputy District Director
Transportation Planning

IL:rm

36.1 Response: Special efforts to guard against the unnecessary removal or modification of native vegetation have been outlined under "Measures Required of the Applicant by Federal Agencies" item G, J, and K, Page 1-66, Vol. 1. Briefly, these measures would ensure that disturbed areas (except permanent access roads and structure sites) would be revegetated using native plants common to the specific area. A botanist would also be present to identify unique plant communities and/or threatened or endangered plant species and would suggest or direct ways of avoiding disturbance. Finally, all stream channels and washes would be returned to their natural state; disturbed riparian vegetation would be restored.

36.2 Response: This has been covered in the mitigation chapter, Vol. 1, Page 4-2, Section 4.b. and Vol. 2, Page 8.4-1.

36.3 Response: This has been covered in the Design Features and Standard Government Agency Requirements, Vol. 1, Page 1-62, Section 2.

36.4 Response: Criteria for power transmission route selections included seismic risk and topographic features; for example, Solomon Basin in Wayne County, Utah was identified as a problem area for the proposed Salt Wash to Jack Henry Junction transmission route. This basin has a history of severe erosion and slumping during wet periods. An alternative route segment was identified and studied.

In California, the proposed and alternative transmission routes would mainly follow existing transmission lines owned and operated by the Los Angeles Department of Water and Power, Southern California Edison Company, and other utility routes. No earthquake, faulting or slope instability problems were identified in the search for information during the preparation of the draft environmental statement.

As described on Page 1-44 of the DES under Power Transmission Systems, the Southern California Transmission System would transmit power from the proposed plant site to the Victorville Converter Station where the power would be delivered to the California participants along existing distribution system. The evaluations of environmental impacts contained in this statement likewise end at the Victorville Converter Station.

36.5 Response: The summary comparison was intended to be a summary of unavoidable adverse impacts rather than a total comparison of the Lynndyl and Salt Wash sites. Much of the required access described in the description of the Salt Wash proposal and the Lynndyl alternative would be closed (measure 2.v, Page 1-67) and therefore would not create unavoidable access problems. A comparison of the acreage that would be disturbed and occupied by the Salt Wash proposal and Lynndyl alternative is provided in the Vegetation and Animal Life sections of the FES Summary of Unavoidable Adverse Impacts.

36.6 Response: Letter 1 Comment 1 discusses cultural resources compliance.

36.7 Response: Properties that are culturally significant to ethnic groups are dealt with in Vol.2, Chapter 4, Mitigating Measures Not Included in the Proposed Action. Measure "g" on Page 8.4-1 provides for consultation with contemporary ethnic groups in California in order to identify areas of special religious or social significance.

36.8 Response: Vol. 2, Page 8.1-40 indicates that right-of-way permits would be required from the State of California for transmission routes across State lands. The proposal is also discussed in Vol. 1, Page 1-82 and has been changed to better clarify the permit procedure. Revised page containing change (underlined) included in Addendum.

COUNTY OF MILLARD

FILLMORE, UTAH 84631

August 27, 1979

37

U. S. Department of the Interior
Bureau of Land Management
Washington, D. C.

Gentlemen:

The commission charged with the supervising of Millard County government and the school administration have requested answers to serious questions created by the proposed Intermountain Power Project and the development of the alternative site at Lynndyl, Utah.

Some of the matters of greatest concern are alluded to in the Draft Environmental Statement of the Intermountain Power Project, U. S. Department of the Interior, Bureau of Land Management, and are briefly summarized from the material and charts 8.3-41 through 8.3-50 of the said report.

Certain of the officials of Millard County directed inquiry to members of the Utah State Legislature and to the Governor and were afforded a hearing on August 14, 1979 with representatives of Intermountain Power Project.

But neither at the Governor's conference nor in the Draft Environmental Statement is there answer to the questions of the Millard County's governing board as to the means and revenues to provide the facilities of water, sewer, solid waste, schools, fire protection, police protection, public health, roads and other related services which will be created by the project. Potentially, the impact on the residents of Millard County and its communities would be traumatic if not properly provided for in advance. The Draft Environmental Statement appears to be silent on the subject except for the statement: "It has not yet legally been determined if the assessed valuation of the Intermountain Power Project plant will or will not be added to Millard County for bonding purposes, although the plant will definitely generate tax like revenue."

The Draft Environmental Impact Statement is also silent or inexplicit about the availability of advance or in lieu of ad valorem taxes.

No definite answer has been provided to Millard County or its officers as to the source of any front-end money to prepare for or alleviate the impact already

being felt in Millard County by programs to develop Intermountain Power Project.

Even though the Board of Commissioners of Millard County have to this point, refrained from public expressions which could create attitudes for or against the project, the County is entitled to and accordingly, we request answers to the question: From what source will these revenues be generated? And when? And the answer should not be delayed beyond the approval date of the impact study.

Very truly yours,

ELDON A. ELIASON
MILLARD COUNTY ATTORNEY

EAE:db

cc: Bureau of Land Management
Utah State Office
University Club Building
Salt Lake City, Utah

Mr. Joseph Fackrell
Intermountain Power Project
Box BB
Sandy, Utah 84070

The Honorable Scott M. Matheson
Governor of the State of Utah
State Capitol Building
Salt Lake City, Utah 84114

The Honorable Thorpe A. Waddingham
Utah State Senator
372 West Main Street
Delta, Utah 84624

The Honorable Cary Peterson
406 East 500 North
Nephi, Utah 84648

37.1 Response: Your concerns with revenues are noted and have been discussed in Letter 8 Comment 3.

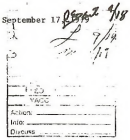
421

The Wildlife Society

UTAH CHAPTER

38

September 17 [illegible]



Bureau of Land Management
University Club Building
136 East South Temple
Salt Lake City, Utah 84111

Dear Sir:

We have reviewed the Intermountain Power Project draft environment statement. Comments of Volume I are not included as we understand it is not a viable site due to the violation of the Class I air quality standards for Capitol Reef National Monument. The Lyndsl site of Volume II is much preferrable from this standpoint as it violates no air quality standards.

We are pleased that wildlife values were important considerations in the planning process. Such practices as ceasing construction of transmission lines during critical periods for elk, deer, sage grouse, desert tortoise, and bald eagles will be beneficial to those and secondarily to the other species of the area.

We are concerned about the impact on pheasant as well as waterfowl and marsh associated bird populations, however. The abandoning of Fool Creek Reservoir with the subsequent displacement of 2,000 birds and the 9 percent decrease in water flow to Topaz Slough might result in a noticeable decrease in populations of waterfowl and marsh birds. An attempt to develop different water sources might be made to avoid the loss of habitat for resident and migratory waterfowl.

Due to the returning of 7,250 to 7,760 acres of irrigated land and the subsequent loss of food and cover, ring-necked pheasant populations will decline. If measures are taken to protect the re-invading native plants from severe grazing, the impact to pheasants can be decreased.

Thanks for the opportunity to review this EIS.

Sincerely,

PAUL W. SHIELDS
President
Utah Chapter - TWS
3813 Village Way
Ogden, Utah 84403

38.1 Response: Your concerns are fully discussed in the ES in the Wildlife section.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
AREA OFFICE COLORADO--UTAH
1311 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138

IN REPLY REFER TO (ES)

September 27, 1979

39

MEMORANDUM

TO: District Manager
Bureau of Land Management
Richfield, Utah

FROM: Area Manager
Fish and Wildlife Service
Salt Lake City, Utah

SUBJECT: Intermountain Power Plant - Draft Environmental Statement, EC # 79/45

The Fish and Wildlife Service has reviewed the above document as it relates to subjects within our field of expertise and legal authority.

GENERAL COMMENTS

In general the statement is well prepared and addresses most impacts to fish and wildlife resources. BLM is to be commended for acomplishing a thorough and objective analysis of a large and complex project.

1 One of the principal adverse effects on fish and wildlife is the loss of water and associated riparian or wetland vegetation. Although the statement addresses these impacts, we wish to further emphasize the significance. In the arid project area water and associated riparian vegetation are vital to most wildlife and are often the critical factor in determining their numbers and distribution.

In a proposal of this magnitude, descriptions of many project features are necessarily rather general, and comments correspondingly general. However, several federal permits or actions would be required before the project could be implemented. For example, a Department of the Army Section 404 permit would be required for construction of the diversion dam, and BLM and Forest Service right-of-way permits for transmission lines and other project features. More detailed and site specific information is normally required in applications for these various permits. More specific comments and recommendations become possible at that time.

Under provisions of the Fish and Wildlife Coordination Act (16 U.S.C. 661-666c; 48 Stat. 401), as amended, the Fish and Wildlife Service is authorized to comment on proposed federally permitted actions affecting waters of the United States, and to recommend modifications or measures to avoid or mitigate losses of fish and wildlife or their habitat. NEPA, the Endangered Species Act, and the BLM Organic Act also provide

9-129

opportunity for review and comment on non-water related federal actions.

In event the project is approved, some of the principal adverse impacts for which the Fish and Wildlife Service would likely seek mitigative measures through the permitting process are listed below.

1. Loss of springs, stream flows, and associated riparian or wetland vegetation with emphasis on waterfowl habitat.

2. Electrocution hazard to raptors on small power lines associated with the project. Technology is available for modifying structures to reduce hazard.

3. Conflicts with endangered species habitat. As detailed planning proceeds, modification of transmission line alignment may be necessary to avoid active eagle nests or similar problems.

Another major adverse impact is the secondary impact of increased human population and associated outdoor activity. In this respect we believe the Lynndyl alternative is preferable to the Salt Wash proposal. Substantial human population and urban developments already exist near the Lynndyl site. In contrast, the Salt Wash Proposal would require extensive urban development and expansion of human activity in a relatively unpopulated, fragile environment.

SPECIFIC COMMENTS - VOLUME I

1-65 f. A biological opinion required by Section 7 of the Endangered Species Act was given by the Regional Director, Fish and Wildlife Service in a June 11, 1979 memorandum to the State Director BLM. The opinion stated that the project is not likely to jeopardize endangered species in the area provided that recommendations contained in the memorandum were implemented.

2 3-22 paragraph 1 - We disagree that impact from increased harassment and poaching on the Henry Mountain bison herd would be minor. Poaching is a serious problem at present and would be intensified by the project.

The opportunity to comment is appreciated.

Robert H. Shiebe

39.1 Response: The impacts of fish and wildlife are addressed on pages 3-20 to 3-26 of Vol. 1 (Salt Wash) and pages 8.3-23 to 8.3-26 of Vol. 2 (Lynndyl). The unavoidable adverse impacts to animal life for both Salt Wash and Lynndyl are compared on pages 6 and 7 of Vol. 3.

39.2 Response: Comment noted; revised page containing this change (underlined) included in the Addendum.

FACSIMILE TRANSMITTED

United States Department of the Interior

BUREAU OF RECLAMATION
UPPER COLORADO REGIONAL OFFICE
P.O. BOX 11568
SALT LAKE CITY, UTAH 84147

40

IN REPLY REFER TO: UC-150

September 28, 1979

120.1

Memorandum

To: District Manager, Bureau of Land Management, Richfield District Office, 150 East 900 North, Richfield, Utah 84701

From: Regional Director

Subject: Review of Draft Environmental Statement - IPP Volume 1, Salt Wash Proposal; Volume 2, Lyndyl Alternative Site; Volume 3, Project Alternatives Appendices and References (DES 79-39)

We have reviewed the above environmental impact statement and verbally relayed the following concerns to the Bureau of Land Management Team field review with the Department of the Interior held in Richfield, Utah, on September 27, 1979. Our review indicates that there are no Upper Colorado Region lands involved or affected by this proposal.

1

We are concerned about the impacts of converting irrigation water to municipal and industrial purposes and the resulting impacts. The following comments apply to that concern:

1. Environmental Impacts - Water Resources - Page 8.3-12

a. The total water requirement is stated as 44,700 acre-feet annually; however, it is not clear if all of this water would be purchased from irrigators, or only the 5,600 acre-feet and the 5,500 acre-feet mentioned.

2

b. The table referred to as Table 8.1-7 should be Table 8.1-6.

3

c. Irrigators in the Sevier River Basin are to be benefited by the increased irrigation supply from the Bonneville Unit of the Central Utah Project as described in the 1973 final environmental impact statement for the Bonneville Unit. Those irrigators in the Sevier River areas who sell their primary rights for power development will not be eligible to buy supplemental or replacement water for those lands from which the primary water rights have been sold. Those farmers not selling their primary rights would be eligible for project water. We see this as a major impact to the area's agricultural economy, as well as to the irrigators involved, especially in a water-short agricultural area.

4

This impact should be discussed.

2. Environmental Impacts - Land Uses Regional Setting, Page 8.3-33.

a. The last paragraph is unclear. It sounds as if the 7,250 to 7,760 acres to be lost to agriculture is the result of only the 5,500 acre-feet of ground water switched from agricultural to power use.

5

b. If comment one is not true, and the 7,250 to 7,760 acres lost is due to the entire 44,700 acre-feet of water transferred to industrial uses, then the use rate for irrigation is about double that of normal agricultural practice.

6

cc: Director, Office of Environmental Project Review, Office of the Secretary, Department of the Interior, Washington, DC 20240
Commissioner, Attention: 150

40.1 Response: Comment noted.

40.2 Response: All of the needed water (both ground and surface sources) would be acquired from those who currently have irrigation water-rights allocated by the State of Utah.

40.3 Response: This citation is in error. A telephone call to the Bureau of Reclamation corrected their comment. The reference to Table 8.1-7 under subheading Water Resources near the bottom of Page 8.3-12 should be changed to.... (see Table 8.1-4). Revised page showing change (underlined) included in Addendum.

40.4 Response: The eventual source for additional water-rights needed by IPP (5,500 acre-feet) would either be from the DMAD irrigation companies or those with water-rights in the Lyndyl-Leamington, Utah area, hence the need for two analyses of economic impacts. Refer to tables 8.3-15 through 8.3-18, Vol. 2, Pages 8.3-44,45 for the two scenarios explaining projected decreases in agricultural earnings.

The cropland losses to the local economy do not reflect the income the farmers receive from the proponents of the Intermountain Power Project resulting from the sale of water rights.

40.5 Response: Proponents of IPP would acquire shares of water from both the DMAD and Central Utah Canal companies. Acquisition of this irrigation water would provide a firm yield of 35,500 acre-feet. However, an additional 5,500 acre-feet of irrigation water would be acquired by IPP from either the DMAD Irrigation Companies or farmers within the Lynndyl-Leamington, Utah area (Table 8.1-4).

Retirement of about 7,760 acres of irrigated farmland is expected if all the water is acquired by IPP from the DMAD irrigation companies. However, only 7,250 acres of farmland would be retired from irrigation if the source of water included that acquired from the DMAD and Central Utah Canal Companies (35,500 acre-feet) and additional water from the Lyndyl-Leamington, Utah area (5,500 feet). Refer to Vol. 2, Table 8.3-9, page 8.3-36 for additional detail concerning lands that would be retired from irrigation.

40.6 Response: Although all the water would be acquired from farmers, only a portion (31 percent) of that amount is actually now being consumed by irrigated crops. The rest is being consumed or lost through evaporation or transpiration from incidental wetlands, water surfaces, and bare ground because of inefficient conveyance systems. The proposed power project reconfiguration could eliminate many of these losses and use this water for its purposes.

In addition, new water is being added to the surface water system by the planned increased pumping of the eight DMAD wells. Thus, there is not a direct (straight line) relationship between water that would be purchased by IPP and the actual farm lands which would be retired from irrigation.

Refer to Figures 8.2-10 and 8.3-1 and Tables 8.3-5 and 8.3-9. DES, Vol. 2, to better understand the complex changes in water supply and land affected.

A change in the text located within DES, Vol. 2, Page 8.3-33, has been made to clarify the statement in regards to acres of agricultural land which would be retired from irrigation. Revised page containing changes (underlined) included in Addendum.

9-130

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
P.O. Box 2417
Washington, D. C. 20013

41

1950

SEP 27 1979

District Manager
Bureau of Land Management
150 East 900 North
Richfield, Utah 84701

Dear Sir:

We have reviewed the draft environmental impact statement for the Intermountain Power Project-Salt Wash Proposal.

We submitted comments to you in our letter dated August 24, 1979, from Regional Forester Vern Hamre, which also stated that comments related to the Fishlake and the Humboldt National Forest project features would be sent to you in the near future.

Our additional comments are as follows:

Reporting of wildlife environment and impacts seems adequate and includes coverage of threatened and endangered plant and animal species and State-recognized sensitive and unique species. Broad coverage to wildlife is recorded for Regional setting, project area, coal haul route and the power transmission system, with and without the IPP, for the alternative Salt Wash and Lynndyl primary project sites.

A general statement should be included concerning siting transmission line pads and posts away from live streams, lakes, and reservoirs to avoid adverse impacts on aquatic resource. Access and service roads should be carefully located and maintained to avoid adverse impacts from

6200-11 (1/80)

9-131

2

stream crossings, channel changes, stream encroachment, and sediment delivery. The aquatic writeup should appear, but it is missing in Volume II, page 8.2 - 40 and 8.3 - 24 to 26. In Volume III: additional fishing pressure on brook trout could be beneficial (animal life writeup). Fish species could be added to the animal list in Appendix II-13.

An Interdisciplinary Team was formed to consider the impacts of the proposed and alternate power line routes on the Humboldt National Forest.

The team observed, on site, the proposed and alternate locations of the 230 KV power line across the Schell Range (Lynndyl to Gonder and Connors Pass). Our concerns about the impacts of the proposed and alternate 230 KV power line routes in the Humboldt National Forest are:

1. Visual impacts.
2. Impacts on soil and water resources.
3. Effects of construction on the Schell Range elk herd.
4. Impacts on cultural resources.
5. Capacity of Lynndyl to Gonder power corridor.

Discussion of Proposed Route and Alternates

We agree that the proposed and alternate routes for the 230 KV power line across the Schell Range are the two most logical routes. Visual impact of a properly installed 230 KV power line along the existing Lynndyl to Gonder power corridor will be minimal. Visual impacts of the Connors Pass Alternate Route will be greater and less acceptable to us because of the foreground-middle ground visual situations created by the three proposed highway crossings. The Connors Pass Alternate middle ground visual impact will be added on the west side of the Schell Range until separation between the power line and the highway can be increased so that the apparent line size is diminished.

The additional 230 KV power line through Sacramento Pass will cause some decrease in quality of the view of Wheeler Peak from the highway.

Soil and water resource impacts would be very minor for construction of the 230 KV line on the Lyndyl to Gonder power corridor since most of the needed roads exist. New construction access roads would be needed for the Connors Pass Alternate and the impacts would be much greater.

Construction of the 230 KV power line on either route would be equally disruptive to the Schell Range elk herd. The effect would be greatest if construction of either route was to take place in the area and during the time of the spring migration. Construction after the migration will have little or no effect on the elk.

On-forest impacts on cultural resources on the existing Lyndyl to Gonder power corridor are zero according to Ranger District records on studies for the original power lines. Indications are that there would be no impacts on cultural resources on the Connors Pass route.

We feel that another 230 KV line of the same type and quality as the existing 230 KV line can fit into the Lyndyl to Gonder power corridor.

Recommendation

We recommend that the 230 KV power line be constructed along the existing Lynndyl to Gonder power corridor. The construction must be done in a manner and with materials that are at least equal to the methods and materials used on the existing lines. Placement of support towers in the Wheeler Peak viewing areas of Sacramento Pass should be done in a manner which best protects the view openings through all the power poles in the corridor.

The Interdisciplinary Team also reviewed the proposed Baking Powder Flat 500 K. V. route as it would pass through Sacramento Pass. The route would not have a direct impact on the Humboldt National Forest, however, we are concerned with the impact that large tower structures would have as they obstruct and detract from the Wheeler Peak Vista as seen from Highway 50 and 6.

Discussion & Recommendation

The visual impacts of the 500 KV power line when viewed from Spring Valley could be greatly reduced by routing the line near the foot of the mountain slope to the west away from the highway to diminish the apparent size of the towers.

The visual impacts of this 500 KV line from the highway through Sacramento Pass are, in our opinion, unacceptable. We do not see how these visual impacts of the larger steel or steel and concrete towers can be sufficiently reduced to make them acceptable.

We recommend that the 500 KV power line be routed south and east of the Snake Division of the Humboldt National Forest rather than through Sacramento Pass.

We appreciate the opportunity to review the Draft Environmental Impact Statement on the Salt Wash Proposal.

Sincerely,

for J. Thomas Reaby

PHILIP L. THORNTON
Deputy Chief

Letter received too late for response by ES team.

SECTION 3--CHAPTER 9

ADDITIONAL INFORMATION

ADDITIONAL INFORMATION: BIOLOGICAL OPINION

United States Department of the Interior

FISH AND WILDLIFE SERVICE

MAILING ADDRESS:
Post Office Box 25486
Denver Federal Center
Denver, Colorado 80225

STREET LOCATION:
134 Union Blvd.
Lakewood, Colorado 80228

IN REPLY REFER TO:
FA/SE/BLM--Intermountain
Power Project

JUN 1 1 1979

MEMORANDUM

To: State Director, Bureau of Land Management
Salt Lake City, Utah

Acting
From: Regional Director, Region 6
Fish & Wildlife Service, Denver, Colorado

Subject: Biological Opinion--Proposed Intermountain Power Project

This is our official response to your March 16, 1979, memorandum requesting formal consultation for the proposed Intermountain Power Project. We have prepared this biological opinion as prescribed in the Interagency Regulations published in the January 4, 1978, Federal Register and the Endangered Species Act Amendments of 1978. A field examination of the site was conducted on May 1 and 2, 1979. We examined the preferred Salt Wash site and the alternate site near Lynndyl. We also examined portions of the powerline corridors.

The bald eagle, peregrine falcon, Utah prairie dog, and black-footed ferret are listed as endangered species and may occur within the corridors of the electric transmission lines. It is our biological opinion that the Intermountain Power Project is not likely to jeopardize the above-listed species if the recommendations presented in this memorandum are implemented.

Bald eagles winter in Utah from mid-November to mid-March. The actual formation of communal roosts begins in December with peak concentrations in January. The roosts become less communal in early March when birds begin to move north to the breeding range. Consequently, any construction activity during this time within 1 mile of an active communal roost may cause birds to temporarily vacate or to totally abandon an area. We suggest that no construction activity occur within 1 mile of communal roosts from December 1 to March 1. Field studies of wintering bald eagle populations should be initiated next winter to document communal roost site selection along the transmission corridor.

CONSERVE AMERICA'S ENERGY

Save Energy and You Serve America!

A proposed electrical transmission line of 46KV would deliver power from the Delta Melville Abraham Deseret reservoir pumping station to the power plant. If this line and others less than 230KV are constructed according to Rural Electrification Administration standards for the prevention of raptor electrocutions as described in the 1975 publication "Suggested Practices For Raptor Protection on Power Lines" by the Raptor Research Foundation, it is our opinion that there will be no significant impact on bald eagles. The wide spacing of conductors on higher voltage lines would minimize electrocution threats to eagles.

No known peregrine falcon eyries occur near the proposed transmission corridors. Therefore, it is unlikely that peregrines would be impacted by the proposed project.

We concur with your recommendation that a qualified wildlife biologist conduct ground surveys to map Utah praire dog colonies near the transmission line on public land. It is conceivable that ground disturbing activities may jeopardize local Utah prairie dog colonies on private lands in Grass, Buckskin, Parowin, and Cedar Valleys. The environmental impact statement implies that some burrows on private lands may be destroyed in these areas as well as in Escalante Desert and the Awapa Plateau. We understand from BLM that the project sponsor has agreed to conduct surface disturbance activities at least 200 yards from Utah prairie dog burrows on private as well as public lands. Identification of prairie dog colonies prior to construction of the transmission line would aid conservation efforts for this species along the entire transmission corridor. Live trapping and relocating Utah prairie dogs from private to public lands is a reasonable and prudent alternative where otherwise irresolvable conflicts exist between transmission line construction and established colonies.

We understand that the Utah transmission system from Salt Wash to Emery, Utah would bisect historic black-footed ferret range. Although there have been no recent verified ferret sightings, we encourage you to survey this stretch of line for ferret sign.

As a result of the Endangered Species Act Amendments of 1978, species proposed to be listed as threatened or endangered are to be considered by Federal agencies when planning and carrying out their projects. We do not formally consult on proposed species, but suggest that a wildlife biologist survey for desert tortoises where the transmission corridor crosses occupied tortoise range. Measures should be taken to avoid damage to tortoise habitat. In particular, access roads should be restored to natural conditions wherever possible.

We also suggest that a qualified botanist survey the project sites for the exact locations of the several proposed plants that may be disturbed by construction activities. Efforts should be made to avoid destruction of proposed plants and their habitats.

We have coordinated with Regions 1 and 2 of this agency regarding Nevada, California, and Arizona portions of the Intermountain Power Project. They have no Federally listed species that will be impacted by the proposed project.

This concludes our official response regarding effects of the Intermountain Power Project on listed species. If the project features change appreciably, consultation should be reinitiated. Thank you for your interest in conserving listed species.

James C. Gritman

ADDITIONAL INFORMATION: UPDATE OF AIR QUALITY STANDARDS

At the time the air quality analyses for the DES was completed, the New Source Performance Standards (NSPS) for nitrogen oxides was 0.7 pounds $NOx/10^6$ Btu. Since then, the standard has been changed to 0.5 to 0.6 pounds $NOx/10^6$ Btu, depending on the coal quality. The modeling results presented in the DES represent the impacts from emission of 0.7 pounds $NOx/10^6$ Btu. Since the new NSPS is lower than the previous NSPS for NOx, the impacts from the plant would be less. As with the previous NSPS at 0.7 pounds $NOx/10^6$ Btu, IPP must meet the 0.5 pounds $NOx/10^6$ Btu before a Prevention of Significant Deterioration permit can be issued by EPA.

ADDITIONAL INFORMATION: WILDERNESS UPDATE

Because BLM's wilderness review is an ongoing process, wilderness data in the Intermountain Power Project DES has become outdated and has been updated in the FES.

Since the DES was printed, wilderness review in Utah has identified wilderness study areas (WSAs) and roadless units that may possess wilderness character within the Salt Wash and Lynndyl regional settings. These areas have been identified and impacts analyzed in the FES.

BLM lands directly associated with the proposed Salt Wash to Emery transmission segment and the coal haul railroad were originally inventoried for wilderness values in the IPP Accelerated Wilderness Inventory. However, because of public concern over the inventory methods which were used, the eight roadless units under review were reinventoried for wilderness values. Seven of these units lacked wilderness character, and have been eliminated from both wilderness review and from the FES. A portion of unit UT-060-007 was determined to possess wilderness character and is identified as Muddy Creek WSA UT-060-007 in the FES. Muddy Creek WSA is located within the proposed Hondu Primitive Area. Impacts have been altered in the FES accordingly.

Other errors in DES wilderness tables and graphs have been noted and text changes made in the FES where applicable.

The following list of revised pages containing changes (underlined) and showing deletions (arrow) included in Addendum:

Vol. 1, Pages 2-67, 2-68, 2-70, 2-71, 2-72, 3-30, 3-32, 3-44, 3-34, 3-35, and 5-7.
Figure 2-25 eliminate "3. Arches NA T," alter "5. Dark Canyon Primitive Area" to "5. Woodenshoe-Dark Canyon," alter"9. Robbers Roost" to "9. Dirty Devil," alter "10. Hondu" to "10. Hondu-Muddy Creek".
Figure 2-26 eliminate units 3, 4, 5, 6, 7, 8, 9, 10).
Figure 2-A eliminate 2-R4 and 2-R2 from A.O.S.C.
Figure 2-H eliminate WSA, R11 from A.O.S.C.

Vol. 2, Pages 8.2-49, 9.2-53, 8.2-56, 8.2-57, 8.3-31, 8.3-36, 8.5-5, and 8.56.
Figure 8.2-E change RU to RA.
Figure 8.8-6 change RU to RA.
Figure 8.8-8 change RU to RA.

Vol. 3, Pages 10, 11, 12, and 13.

ADDITIONAL INFORMATION: LYNNDYL SITE AND RAILROAD ON THE SUGARVILLE ALLOTMENT.

Description of the Existing Environment

The Lynndyl generating station, railroad spur, water pipeline, and portions of the transmission lines would be located in BLM's 62,199 acre Sugarville Livestock Grazing Allotment. There are six livestock operators allowed grazing permits for a total of 3,514 animal unit months (AUMs) on the allotment. Livestock use the allotment for about 6 months each year between April and November and drift from the southern to the northern portion as the season progresses. Livestock water is provided by means of windmill pumped wells and stock ponds.

Impacts

The IPP facilities would remove about 215 AUMs of livestock forage from the affected allotment. BLM livestock grazing permits issued to the livestock operators would be reduced by 6 to 8 percent.

Livestock movement from the southern to northern portions of the western side of the allotment would be blocked and livestock would not be able to get water in the northwestern portion of the allotment. This would necessitate hauling of cattle and water and increased expenses for livestock operators.

Increase in traffic on Highway 272 in the vicinity of the plant site from 200 to 2,000 vehicles per day could result in loss of livestock from collision with vehicles, and livestock would present a risk to human health and safety.

Mitigation

1. A 200-foot wide livestock driveway would be provided along the western boundary line of the project site to allow access from the southwestern to the northwestern portion of the Sugarville Allotment.

2. IPP would provide a source of livestock water along the northwestern boundary of the project site.

3. Highway 272 would be fenced along both sides for about 11 miles from the southwestern corner of the project site east to U.S. Highway 50 and 6. Gates would be provided on both sides of Highway 272 at the southwestern corner of the project site and at 1 mile intervals between the southeastern corner of the project site and U.S. 50 and 6. Cattleguards would be placed on existing roads.

Unavoidable Adverse Impacts

Six livestock operators would lose a total of 215 AUMs which represents 6 to 8 percent of their grazing privileges in the Sugarville Allotment.

Random livestock movement from the southern to northern portions of the Sugarville Allotment would be blocked by fencing of Highway 272. This would necessitate movement of livestock by the operators and would result in increased expenses.

ADDITIONAL INFORMATION: MOAPA INDIAN RESERVATION ALTERNATIVE

A proposed expansion of the Moapa Indian Reservation near Glendale, Nevada (Senate Bill 1135 and House Bill 4418) could require negotiations between IPP and the Moapa Tribe over 13 miles of right-of-way for the Cedar Wash to Gypsum Junction segment of the Salt Wash proposed transmission system or the Toquop Junction to Gypsum Junction segment of the Lynndyl alternative transmission system. Although the Bills contain provisions for existing rights-of-way, there are no provisions for proposed or future right-of-way requirements.

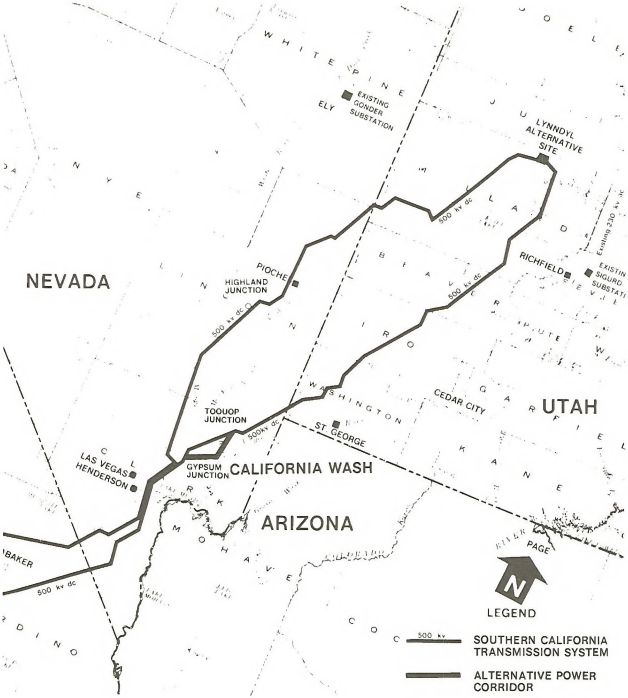
Two options have been identified to avoid conflicts with the proposed Moapa Indian Reservation Expansion.

Option 1: California Wash Alternative

TABLE 9.A-1

California Wash Alternative to the Cedar Wash or Toquop to Gypsum Junction Segment

California Wash Alternative	Salt Wash or Lynndyl Proposal
The alternative would leave the proposed route at milepost 60 of the Cedar Wash (or Toquop) to Gypsum Junction Segment and would run south crossing I-15 at milepost 4. At milepost 11 the alternative turns at a southwesterly direction crossing the American Borax Road at milepost 17. It continues in the same direction but with some slight turns until joining the proposed route at milepost 87 where it would follow the Muddy Mountain alternative route west of the Navajo-McCullough Line (Figure 9.A-1)	The proposed route trends southwesterly from milepost 60, then turns south at milepost 72 to cross I-15 and extends to milepost 89 south of the Dry Lake Range.
Length of Route 28 miles Width of Right-of-Way 130 feet Area in Right-of-way 441 acres BLM 28 miles State 0 miles Private 0 miles	Length of Route 29 miles Width of Right-of-way 130 feet Area in right-of-way 425 acres BLM 29 miles State 0 miles Private 0 miles
Acres Disturbed / Acres Occupied Structures 101 / 4 New Roads (21 miles) 38 / 4	Acres Disturbed / Acres Occupied Structures 97 / 4 New Roads (access only) 4

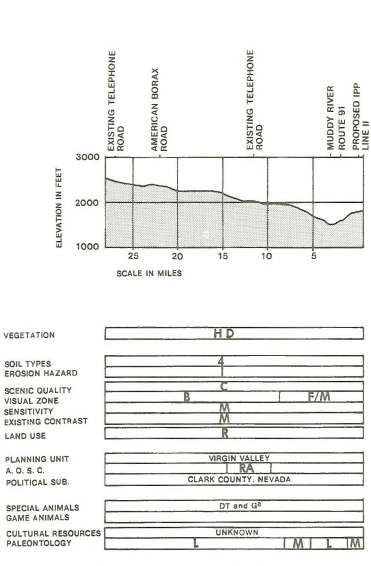


CALIFORNIA WASH ALTERNATIVE ROUTE

FIGURE 9.A-1

TABLE 9.A-1 (continued)

California Wash Alternative	Salt Wash or Lynndyl Proposal
Description of Environment	
Figure 9.A-2 summarizes the environmental setting.	See Figure 2-I (mileposts 60 to 89) for environmental setting.
Impacts	
No specific mitigating measures were identified for the following impacts. They are unavoidable.	
Paleontology	**Paleontology**
Approximately 5 miles of geologic formations with potential for medium paleontological significance and 23 with low significance would be crossed. Due to limitations in salvage techniques, an unquantifiable loss of scientific-educational information would result.	Approximately 20 miles of geologic formations with potential for medium paleontological significance and 9 with low significance would be crossed. Due to limitation in salvage techniques, an unquantifiable loss of scientific-educational information would result.
Soils	**Soils**
No issue identified.	Route would cross 7 miles of moderate to high erosion hazard soils. Erosion would be localized on disturbed areas. No impacts on other resources would be expected. Revegetation without seeding could take 10 to 20 years (SCS, 1978).
Vegetation	**Vegetation**
One proposed endangered and two candidate threatened or endangered plant species occur along the line (see Appendix VIII-1). Even with Federally required measures, it is possible that some individual plants of this species could be inadvertently destroyed. It is not likely that the continued existence of this species would be jeopardized.	One proposed endangered and two candidate threatened or endangered plant species occur along the line. Even with Federally required measures, it is possible that some individual plants of this species could be inadvertently destroyed. It is not likely that the continued existence of this species would be jeopardized.
Animal Life	**Animal Life**
The entire route would pass through desert tortoise and Gila monster habitat. No concentration areas have been identified. This alterna-	The entire route would pass through desert tortoise and Gila monster habitat. No concentration areas are known.



[a] Desert Tortoise and Gila Monster are known in the area, but it has not been shown to be a concentration area.

LEGEND

VEGETATION
- F- Forest
- MB- Mountain Brush
- PJ- Pinyon Juniper
- CD- Cold Desert Shrub
- HDJ Joshua Tree Forest
- C- Chaparral
- B- Barren
- R- Riparian
- UA- Urban Agriculture
- HD- Hot Desert Shrub

SOIL TYPE
- 1- Deep Alluvial Valley
- 2- Shallow, Shale-Clay
- 3- Shallow, Rocky
- 4- Desert
- 5- Mountain and Foothills

EROSION HAZARD
- 1- Slight-Moderate
- 2- Moderate-High
- 3- Severe

VISUAL FEATURES

SCENIC QUALITY
- A- High
- B- Medium
- C- Low

VISUAL ZONES
- F/M- Foreground/Middleground
- B- Background
- SS- Seldom Seen

SENSITIVITY
- H- High
- M- Medium
- L- Low

EXISTING MANMADE CONTRAST
- H- High
- M- Medium
- L- Low

LAND USE
- R- Open Range
- F- Forest
- U- Urban
- A- Agriculture
- B- Barren

PLANNING UNIT BY NAME

AREAS OF SPECIAL CONCERN (AOSC)
- U-LD-Urban Low Density
- Ag- Agriculture
- R-II- U.S. Forest Service Rare II Wilderness Recommendation
- WSA- BLM Wilderness Study Area
- RA- BLM Uninventoried Roadless Area
- Others- By Name

POLITICAL SUBDIVISIONS BY NAME

HABITAT OF SPECIAL ANIMAL LIFE
- UPD- Utah Prairie Dog
- DT- Desert Tortoise Concentration
- F- Threatened or Endangered Fish
- G- Gila Monster
- R- Raptor Concentration Area
- BF- Potential Black-footed Ferret
- BT- Bendire's Thrasher and Gilded Flicker
- WH- Wild Horses
- WB- Wild Burros
- U- Species
- WF- Water Fowl

IMPORTANT GAME HABITAT
- O- Critical Deer Range
- B- Desert Bighorn Sheep Range
- PB- Potential Desert Bighorn Sheep Range
- S- Sage Grouse Concentration Area
- P- Pheasant Habatat

CULTURAL RESOURCES: NUMBER OF SITES
- ( ) Eligible for National Register

PALEONTOLOGICAL RESOURCES
- H- Potentially High Paleontological Significance
- M- Potentially Medium Paleontological Significance
- L- Low Paleontological Significance

ENVIRONMENTAL PROFILE: CALIFORNIA WASH ALTERNATIVE

Figure 9A-2

TABLE 9.A-1 (continued)

California Wash Alternative	Salt Wash or Lynndyl Proposal
Animal Life (cont.)	
tive would disturb about 38 more acres of habitat than the proposed route.	
Cultural Resources	Cultural Resources
The number of cultural sites along this route is unknown. Several could be eligible for the National Register.	Twenty-nine cultural sites, of which 14 are eligible for the National Register, are located in this section of corridor.
Impacts	
Recreation and Aesthetics	Recreation and Aesthetics
The transmission lines would cross U.S. Highway 93 in an area of low quality scenery, and would create high manmade contrast visible to travelers in 6,645 vehicles daily.	The transmission lines would cross U.S. Highway 93 in an area of low quality scenery, and would create high manmade contrast visible to travelers in 6,645 vehicles daily.
The line would cross Nevada Highway 40, the primary access route to Valley of Fire State Park. The line would create high manmade contrast visible to travelers in 120 vehicles daily, and would reduce the quality of the recreation experience for some visitors to the park.	
The entire corridor is an off-road vehicle use area, and the presence of the transmission lines would reduce the quality of the ORV experience to some visitors.	
The line would be visible (medium contrast) from the portions of the Muddy Mountain WSA.	The proposed line would be visible medium contrast) from portions of the Muddy Mountain WSA.
Land Use	
The lines would cross 2 miles within BLM Roadless Unit NV-050-0226 for 5 miles (mileposts 10-15) see Figure 9.A-2). The unit has been identified as lacking wilderness character and has been recommended to be dropped from further wilderness review (BLM, 1979).	The proposed route would cross 200 feet within the BLM proposed Muddy Mountain WSA (NV-050-IPP-15), for 4 miles (mileposts 85 to 89). (See Figure 2-I.)

TABLE 9.A-1 (concluded)

California Wash Alternative	Salt Wash or Lynndyl Proposal
Land Use (cont.)	Land Use (cont.)
Wilderness suitability would be impaired adjacent to the line, and could not be allowed prior to a management decision on the unit scheduled for January, 1980.	Wilderness character (i.e. naturalness) and wilderness suitability would be impaired adjacent to the line, and could not be allowed prior to Congressional decision.
Land Use Plans and Controls	Land Use Plans and Controls
Las Vegas District BLM	
The Virgin Valley MFP does not identify this route as a utility corridor.	
Indian Reservation	Indian Reservation
The alternative route would avoid potential Moapa Indian Reservation lands.	The proposed route would pass through an area that has been proposed for inclusion into the Moapa Indian Reservation. Should this inclusion be made prior to granting of rights-of-way for the transmission lines, the rights-of-way would have to be negotiated with the Moapa Tribe.

Option 2:

As an alternative to routing the proposed rights-of-way around the Moapa Indian Reservation expansion, BLM is requesting the Nevada Congressional Delegation amend the Bills to include a reservation for a transportation corridor. This corridor would encompass the existing Navajo-McCullough transmission line and extend 1,500 feet on each side of the existing line. The 3,000 foot corridor would be adequate to include the proposed IPP transmission line, other proposed utility rights-of-way, and possible future rights-of-way needs.

ADDITIONAL INFORMATION: DELAMAR MOUNTAIN WILDERNESS STUDY AREA ALTERNATIVE

The proposed Lincoln Junction to Gypsum Junction segment of the California Transmission System would cross within the BLM Delamar Mountain Wilderness Study Area (WSA) for about 15 miles. Two routing options to avoid conflicts with the Delmar Mountain WSA are identified in Chapter 8 of Volume I (page 8-71 through 8-73). Due to changes in the boundary of the Delamar Mountain WSA and because of the designation of four additional WSAs in the Delamar Mountain areas since the DES was printed, these two alternative routing options have been replaced with three alternatives described and analyzed on Table 9.A-2 of the FES.

Five areas with potential for wilderness designation have been identified in the vicinity of Delamar Mountain. These include the following four BLM Wilderness Study Areas: Delamar Mountain (NV-050-IPP-07), Evergreen (NV-050-01R-16), Fish and Wildlife 1, 2, and 3 (NV-050-0201, NV-050-0216, and NV-050-0217); and the U.S. Fish and Wildlife Service (USFWS) Desert Game Range Wilderness Proposal (hereafter referred to as Desert Wilderness Proposal). See Figure 9.A-3 for location of areas. Note also on Figure 9.A-3, U.S. Highway 93 and 69 kV line which are used to describe the alternative routes on Table 9.A-2.

The U.S. Fish and Wildlife Service has applied for withdrawal of BLM lands on the west side of U.S. Highway 93 (mileposts 62 to 72 and 75 to 118 of the proposed corridor) between the highway and the boundary of the Desert National Wildlife Range to include in the Desert Wilderness Proposal. In a letter to the House Subcommittee dated September 17, 1979, the U.S. Fish and Wildlife Service suggested a boundary modification which would move the Desert Wilderness Proposal boundary west 1,200 feet from the centerline of Highway 93 to allow for the existing Lincoln County Power District #1 69-kV a.c. power transmission line and possible future power lines. Figure 9.A-3 identifies the modified boundary. Table 9.A-2 analyzes impacts on the modified USFWS wilderness proposal.

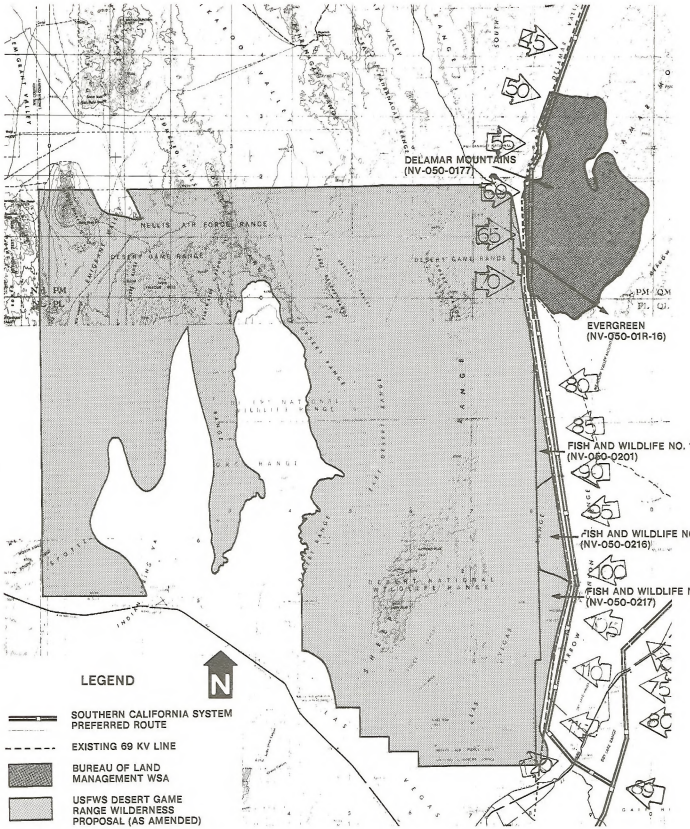
TABLE 9.A-2

Delamar Mountain Wilderness Study Area Alternative

Option 1	Option 2	Option 3	Proposed Route
		ROUTE DESCRIPTION	
This option would be to construct the 500-kV transmission line between milepost 49 to 62 of the proposed Lincoln Junction to Gypsum Junction segment on the west side of a road located immediately west of an existing 69-kV a.c. transmission line. From milepost 62 to 103, the 500-kV d.c. IPP transmission line would be located within the existing 69-kV Lincoln County Power District I transmission line right-of-way. From milepost 72 to 75 about 2 1/4 miles of the line would cross within the U.S. Fish and Wildlife Service's Desert National Wildlife Range which is proposed for wilderness designation. The 69-kV power poles would be removed and power lines placed on the new 500-kV d.c. line towers. At milepost 103 where the 69-kV line passes back to the east of Highway 93, the IPP transmission line would leave the 69-kV line right-of-way and join the proposed corridor.	This option would be to place the 500-kV transmission line between milepoints 49 to 62 of the proposed Lincoln Junction to Gypsum Junction segment on the west side of a road located immediately west of an existing 69-kV a.c. transmission line. From milepost 62 to 72, the alternative route would pass between U.S. Highway 93 and the existing 69-kV a.c. transmission line. At milepost 72, the route would turn to the east to join the proposed route located on the east side of U.S. Highway 93.	This option would be to relocate the 500-kV transmission line between milepoints 49 to 62 of the proposed Lincoln Junction to Gypsum Junction segment on the west side of a road located immediately west of an existing 69-kV a.c. transmission line. From milepost 62 to 103, the alternative line would be located west of U.S. Highway 93, to the west of and parallel to the existing 69-kV a.c. transmission line. The route would cross 100 feet within the Fish and Wildlife Service's Desert Wilderness proposal (milepost 62 to 103), and 100 feet within the following four BLM WSAs: Evergreen (milepost 62 to 72) and Fish and Wildlife 1, 2, and 3 (milepost 75 to 103).	The proposed Lincoln to Gypsum Junction segment would cross 200 feet within BLM's Delamar Mountain WSA (NV-050-IPP-07), for 15 miles (mileposts 49 to 55 and 61 to 70).
		IMPACTS	
		Aesthetics	
Anticipated increase in man-made contrast from the alternate line would be high when viewed from the USFWS Desert Wilderness Proposal area and from the following four BLM WSAs: Fish and Wildlife 1, 2, and 3 (NV-050-0201, NV-050-0216, NV-050-0217) and Evergreen (NV-050-01R-16). Anticipated increase in man-made contrast would be low when viewed from WSA NV-050-IPP-07 Delamar Mountain	Anticipated increase in man-made contrast from the alternate line would be medium when viewed from the USFWS Desert Wilderness proposal and from the following four BLM WSAs: Fish and Wildlife 1, 2, 3 (NV-050-0201, NV-050-0216, NV-050-0217) and Evergreen (NV-050-01R-16). Anticipated increase in man-made contrast would be low when viewed from WSA NV-050-IPP-07 Delamar Mountain.	Anticipated increase in man-made contrast from the alternate line would be high when viewed from the U.S. Fish and Wildlife Service's Desert Wilderness Proposal and from the following four BLM wilderness study areas: Fish and Wildlife 1, 2, and 3 (NV-050-0201, NV-050-0216, NV-050-0217) and Evergreen (NV-050-01R-16). The line would be visible (low contrast) from the Delamar Mountain WSA (NV-050-IPP-07).	Anticipated increase in man-made contrast from the proposed line would be high as viewed from portions of the Delamar Mountain WSA (NV-050-IPP-07). A steep terrain break would isolate the new line from the bulk of the WSA. The line would be visible (low contrast) from the Desert Wilderness Proposal and from the following four BLM WSAs: Fish and Wildlife 1, 2, and 3 (NV-050-0201, NV-050-0216, NV-050-0217) and Evergreen (NV-050-01R-16).
Construction on the west side of U.S. 93 would avoid a severe tunneling effect along U.S. 93 between milepost 62 to 103. The alternative would require two additional crossings of U.S. 93 in low quality scenery areas, visible to travelers in 700 vehicles daily.	Construction on the west side of U.S. 93 would avoid a severe tunneling effect along U.S. 93 between milepost 62 to 72. The alternative would require two additional crossings of U.S. 93 in low quality scenery areas, visible to travelers in 700 vehicles daily.	The alternative would require two additional crossings of U.S. Highway 93, in low quality scenery areas, visible to travelers in 700 vehicles daily. Construction on the west side of of the highway would avoid a severe tunneling effects along U.S. 93 between mileposts 62 to 103 of the Lincoln to Gypsum Junction segment.	The proposed transmission line, in combination with the existing 69-kV a.c. line that parallels U.S. 93 on the west would cause an adverse tunneling effect to travelers in 700 vehicles daily between mileposts 62 to 103.

TABLE 9.A-2 (concluded)

Option 1	Option 2	Option 3	Proposed Route
		Land Use	
No impact anticipated.	No impact anticipated.	From mileposts 62 to 103 where the alternate route would cross 100 feet within the Fish and Wildlife Service's Desert Wilderness Proposal and within the following four BLM wilderness study areas: Fish and Wildlife 1, 2, and 3 (NV-050-0201, (NV-050-0216, NV-050-0217) and Evergreen (NV-050-01A-16), wilderness character (i.e., naturalness) and wilderness suitability would be impaired adjacent to the line, and could not be allowed prior to Congressional decision on these areas.	Wilderness character (i.e., naturalness) and wilderness suitability would be impaired adjacent to the line in the BLM's Delamar Mountain WSA (NV-050-IPP-07) for 15 miles, could not be allowed prior to Congressional decision.



AREAS WITH POTENTIAL FOR WILDERNESS DESIGNATIONS IN THE DELAMAR MOUNTAIN AREA

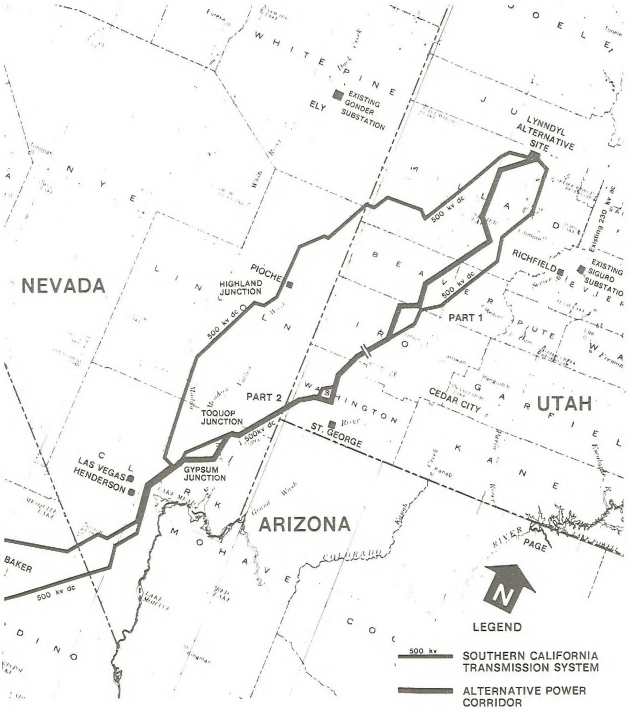
FIGURE 9.A-3

A system alternative to avoid conficts with potential wilderness areas would be to route both IPP 500-kV d.c. lines along the Lynndyl to Toquop Junction segment discussed in Volume II (Figure 8-2C). That alternative is described in the following section as the Western Utah Alternative.

TABLE 9.A-3

Western Utah Alternative Lynndyl to Gypsum Junction

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
Route Description	
The Western Utah Alternative would be to place both 500-kV d.c. lines along route II (through Western Utah) from Lynndyl to Gypsum Junction, but modify the proposed route II to follow the Black Rock, Lund, and Mountain Meadow Alternative routes described in Volume II, Chapter 8.8 of the DES, a minor route change near Central, Utah, the Muddy Mountain Wilderness Study Area alternative discussed in Volume I, Chapter 8 of the DES, and the California Wash alternative described in the FES. Figure 9.A-4 shows the Western Utah Alternative Route.	The proposed California Transmission System includes two 500-kV d.c. lines in separate corridors from the Lynndyl plant site to Gypsum Junction (Figure 8.1-5).
Length of Corridor 280 mi. Land Status--BLM, 187; Bureau of Reclamation, 1; USFS, 11; State, 22; Private, 59. Right-of-way width - 330 ft. Right-of-way acreage - 11,200 Circuit miles -- 500-kV d.c. 1120 mi.	Length of Corridor 580 miles Land Status--BLM, 476; Bureau of Reclamation, 1; USFS, 11; State, 30; Private, 62. Right-of-way width - 130-330 ft. Right-of-way acreage - 12,290 Circuit miles -- 500-kV d.c. 1160 mi.
Structures: Acres Disturbed 2,049; Acres Occupied 100 Access Roads (179 miles): 304; 28 Stub Roads: 143; 0 Total: 2,496; 128	Structures: Acres Disturbed 2,093; Acres Occupied 93 New Access Roads (312 miles): 529; 51 Stub Roads: 60; 0 Total: 2,682; 144
Description of the Environment	
The environment of the Western Utah Alternative is summarized on Figures 9.A-5 and 9.A-6.	A description of the environment of the Proposed Route is found in Chapter 2 (Volume I), Figure 27-D and in Part C of Volume II (Figures 8.2-B through 8.2-D).



WESTERN UTAH ALTERNATIVE ROUTE

FIGURE 9.A-4

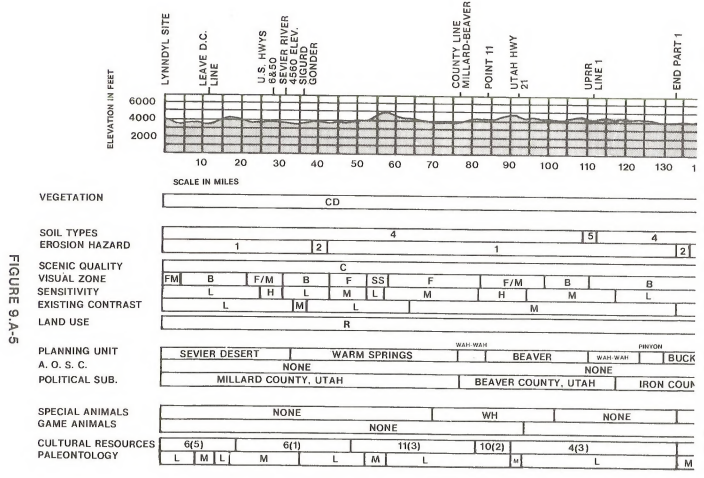


FIGURE 9.A-5

9-153

ENVIRONMENTAL PROFILE: WESTERN UTAH ALTERNATIVE ROUTE

LEGEND

VEGETATION
- F- Forest
- MB- Mountain Brush
- PJ- Pinyon Juniper
- CD- Cold Desert Shrub
- HD-J Joshua Tree Forest
- C- Chaparral
- B- Barren
- R- Riparian
- UA- Urban Agriculture
- HD- Hot Desert Shrub

SOIL TYPE
- 1- Deep Alluvial Valley
- 2- Shallow, Shale-Clay
- 3- Shallow, Rocky
- 4- Desert
- 5- Mountain and Foothills

EROSION HAZARD
- 1- Slight-Moderate
- 2- Moderate-High
- 3- Severe

VISUAL FEATURES

SCENIC QUALITY
- A- High
- B- Medium
- C- Low

VISUAL ZONES
- F/M- Foreground/Middleground
- B- Background
- SS- Seldom Seen

SENSITIVITY
- H- High
- M- Medium
- L- Low

EXISTING MANMADE CONTRAST
- H- High
- M- Medium
- L- Low

LAND USE
- R- Open Range
- F- Forest
- U- Urban
- A- Agriculture
- B- Barren

PLANNING UNIT BY NAME

AREAS OF SPECIAL CONCERN (AOSC)
- U-LD-Urban Low Density
- Ag- Agriculture
- R-II- U.S. Forest Service Rare II Wilderness Recommendation
- WSA-BLM Wilderness Study Area
- RA- BLM Uninventoried Roadless Area
- Others- By Name

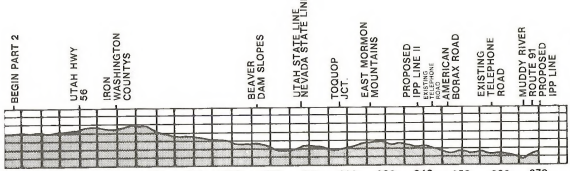
POLITICAL SUBDIVISIONS BY NAME

HABITAT OF SPECIAL ANIMAL LIFE
- UPD- Utah Prairie Dog
- DT- Desert Tortoise Concentration
- F- Threatened or Endangered Fish
- G- Gila Monster
- R- Raptor Concentration Area
- BF- Potential Black-footed Ferret
- BT- Bendire's Thrasher and Gilded Flicker
- WH- Wild Horses
- WB- Wild Burros
- U- Species
- WF- Water Fowl

IMPORTANT GAME HABITAT
- D- Critical Deer Range
- B- Desert Bighorn Sheep Range
- PB- Potential Desert Bighorn Sheep Range
- S- Sage Grouse Concentration Area
- P- Pheasant Habatat

CULTURAL RESOURCES: NUMBER OF SITES
- ( ) Eligible for National Register

PALEONTOLOGICAL RESOURCES
- H- Potentially High Paleontological Significance
- M- Potentially Medium Paleontological Significance
- L- Low Paleontological Significance



VEGETATION: CD | PJ | CD | PJ | HD | HD-J | HD

SOIL TYPES: 5 | 4

EROSION HAZARD: 2 | 1 | 2 | 1 | 1

SCENIC QUALITY: C | B | C

VISUAL ZONE: B | F/M | B | SS | B | F/M

SENSITIVITY: L | M | H | M | L

EXISTING CONTRAST: H | L

LAND USE: R | F | R | F | R

PLANNING UNIT: BUCKSKIN | MUDSPRING | VIRGIN RIVER | CALIENTE | VIRGIN VALLEY

A. O. S. C.: NONE | RA | NONE

POLITICAL SUB.: COUNTY, UTAH | WASHINGTON COUNTY, | LINCOLN, NEVADA | CLARK COUNTY, NEVADA

SPECIAL ANIMALS: WH | NONE | DT | DT & G

GAME ANIMALS: NONE

CULTURAL RESOURCES: 1 | 3 | 10(5) | 0 | 5(4) | 4(3) | UNKNOWN

PALEONTOLOGY: M | L | M | L | M | L | M | L | M | L | L | M | L | M | L | M

FIGURE 9.A-6

9-154

ENVIRONMENTAL PROFILE: WESTERN UTAH ALTERNATIVE ROUTE

LEGEND

VEGETATION
- F- Forest
- MB- Mountain Brush
- PJ- Pinyon Juniper
- CD- Cold Desert Shrub
- HD-J Joshua Tree Forest
- C- Chaparral
- B- Barren
- R- Riparian
- UA- Urban Agriculture
- HD- Hot Desert Shrub

SOIL TYPE
- 1- Deep Alluvial Valley
- 2- Shallow, Shale-Clay
- 3- Shallow, Rocky
- 4- Desert
- 5- Mountain and Foothills

EROSION HAZARD
- 1- Slight-Moderate
- 2- Moderate-High
- 3- Severe

VISUAL FEATURES

SCENIC QUALITY
- A- High
- B- Medium
- C- Low

VISUAL ZONES
- F/M- Foreground/Middleground
- B- Background
- SS- Seldom Seen

SENSITIVITY
- H- High
- M- Medium
- L- Low

EXISTING MANMADE CONTRAST
- H- High
- M- Medium
- L- Low

LAND USE
- R- Open Range
- F- Forest
- U- Urban
- A- Agriculture
- B- Barren

PLANNING UNIT BY NAME

AREAS OF SPECIAL CONCERN (AOSC)
- U-LD-Urban Low Density
- Ag- Agriculture
- R-II- U.S. Forest Service Rare II
- Wilderness Recommendation
- WSA-BLM Wilderness Study Area
- RA- BLM Unineventoried Roadless Area
- Others- By Name

POLITICAL SUBDIVISIONS BY NAME

HABITAT OF SPECIAL ANIMAL LIFE
- UPD- Utah Prairie Dog
- DT- Desert Tortoise Concentration
- F- Threatened or Endangered Fish
- G- Gila Monster
- R- Raptor Concentration Area
- BF- Potential Black-footed Ferret
- BT- Bendire's Thrasher and Gilded Flicker
- WH- Wild Horses
- WB- Wild Burros
- U- Species
- WF- Water Fowl

IMPORTANT GAME HABITAT
- D- Critical Deer Range
- B- Desert Bighorn Sheep Range
- PB- Potential Desert Bighorn Sheep Range
- S- Sage Grouse Concentration Area
- P- Pheasant Habatat

CULTURAL RESOURCES: NUMBER OF SITES
- ( ) Eligible for National Register

PALEONTOLOGICAL RESOURCES
- H- Potentially High Paleontological Significance
- M- Potentially Medium Paleontological Significance
- L- Low Paleontological Significance

TABLE 9.A-3 (continued)

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
Impacts (With the exception of impacts to animal life, the following are unavoidable.)	
Paleontology	Paleontology
Approximately 75 miles of geologic formations with medium paleontological significance and 205 miles with low would be crossed. Due to limitations in salvage techniques, an unquantifiable loss of scientific-educational information would result.	Approximately 11 miles of geologic formations with potentially high paleontological significance, 135 with medium, and 434 with low significance would be crossed. Due to limitations in salvage techniques, an unquantifiable loss of scientific-educational information would result.
Soils	Soils
Route would cross 10 miles of high erosion hazard soils. Erosion would be localized on disturbed areas and no impacts to other resources would be expected. Revegetation without seeding could take 10 to 20 years (SCS, 1978).	Route would cross 86 miles of high erosion hazard soils. Erosion would be localized on disturbed areas. No impacts on other resources would be expected. Revegetation without seeding could take 10 to 20 years (SCS, 1978).
Vegetation	Vegetation
Four proposed endangered and five candidate threatened species occur on or near this route.	Eight proposed endangered, one candidate endangered and twelve candidate threatened species occur on or near this route.
Even with Federally required measures it is possible that individual plants of these species could be destroyed. The continued existence of the species would not likely be jeopardized.	Even with Federally required measures it is possible that individual plants of the species could be destroyed. The continued existence of the species would not likely to be jeopardized.
Animal Life	Animal Life
No issue identified.	Mule deer would be disturbed (milepost 126-128 of Line I) during the critical winter period of November 1 to May 30.
	Deer fawning could be interrupted (milepost 159-167 of Line II) between May 15 to July 15.

TABLE 9.A-3 (continued)

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
	These activities could result in an unquantifiable loss of deer.
Approximately 17 miles of desert tortoise concentration area (mileposts 200-217) would be crossed. About 180 acres would be disturbed of which 9 would remain occupied for the life of the project. About 88 miles of Gila monster habitat would be crossed.	Approximately 43 miles of desert tortoise concentration areas (mileposts 100-126 of Line I and 201-218 of Line II) would be crossed. About 210 acres would be disturbed of which 12 would remain occupied for the life of the project. About 108 miles of Gila monster habitat would be crossed.
Some desert tortoises and other small animals could be killed by machinery. Dens, burrows, and nests could be destroyed. The percent of the total habitat affected would be small.	Some desert tortoises and other small animals could be killed by machinery. Dens, burrows and nests could be destroyed. The percent of the total habitat affected would be small.
Wild horses could be temporarily displaced along the following segments during powerline construction: 55 wild horses - mileposts 70-104 6 wild horses - mileposts 134-149	Wild horses would be temporarily displaced along the following segments during powerline construction: Line I 43 wild horses - mileposts 70-90 12 wild horses - mileposts 90-105 115 wild horses - mileposts 110-160 6 wild horses - mileposts 165-185 Line II 55 wild horses - mileposts 70-105 6 wild horses - mileposts 135-150
It is not anticipated that adverse impacts would occur to wild horses.	It is not anticipated that adverse impacts would occur to wild horses.
Cultural Resources	Cultural Resources
Archaeology: Construction could damage 60 known sites, 26 of which are eligible for nomination to the National Register of Historic Places. The number of sites along the California Wash Alternative Route is unknown but is expected to be higher than along the replaced section of the proposed route.	Archaeology: Construction could damage 101 sites, of which 38 are eligible for nomination to the National Register of Historic Places.

TABLE 9.A-3 (continued)

Western Utah Alternative

Recreation and Aesthetics

Transmission lines would cross 7 highways and would have the following visual impacts:

Route Seg.	No. of Crossings and Hwy.	ADT[a]	Anticipated Contrast
Lynndyl to Toquop Jct.	1(US-50)	325	High
	1(UT-21)	120	High
	1(UT-56)	650	Med.
	1(UT-18)	355	Low
Toquop Jct. to Gypsum Jct.	1(I-15)	12,200	High
	1(NV-1)	490	High
	1(NV-40)	120	High

[a]Source: 1. 1977 Annual Traffic Report, Nevada Highways, Nevada Dept. of Highways, 1978.
2. Traffic on Utah Highways, Utah Department of Transportation, 1977.

[b]Highway crossing would parallel existing transmission lines.

The transmission lines would cause adverse manmade contrast in or near visually sensitive areas

Lynndyl to Gypsum Junction Proposal

Recreation and Aesthetics

Transmission lines would cross 13 highways and would have the following visual impacts:

Route Seg.	No. of Crossings and Hwy.	ADT[a]	Anticipated Contrast
Lynndyl to Highland Jct.	1(US-6 & 50)	325	High
	1(US-93)	460	Med.
	1(272)	150	High
	1(UT-21)	85	High
Highland Jct. to Gypsum Jct.	1(I-15)	6,645[b]	High
	2(US-93)	700	High
		655	High
	1(NV-7)	65	High
Lynndyl to Toquop Jct.	1(US-6)	850	High
	1(UT-125)	210	High
	1(UT-50)	620	High
	1(UT-257)	140	High
	1(UT-21)	120	High
	1(UT-56)	650	Med.
	1(UT-18)	355	Med.
	1(377)	170	High.
Toqup Jct. to Gypsum Jct.	1(I-15)	12,220	High
	1(NV-1)	490	High

[a]Source: 1. 1977 Annual Traffic Report, Nevada Highways, Nevada Department of Highways, 1978.
2. Traffic on Utah Highways, Utah Department of Transportation, 1977.

[b]Highway crossing would parallel existing transmission lines.

The transmission lines would cause adverse manmade contrast in or near visually sensitive areas such as

TABLE 9.A-3 (continued)

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
such as major travel routes, primary highway crossings, high quality scenic areas, communities, or in areas with recreational values. Where proposed transmission lines would parallel existing lines, additional contrast would generally not add appreciably to present contrast.	major travel routes, primary highway crossings, high quality scenic areas, communities, or in areas with recreational values. Where proposed transmission lines would parallel existing lines, additional contrast would generally not add appreciably to present contrast.
The alternative system would cross 7 highways in areas of low quality scenery as shown above. Near the plant site, the route would parallel Highway 272 (milepost 0-10, Figure 9.A-5) and would be visible to travelers in 200 vehicles daily. It would parallel Utah Highway 18 (U-18) (milepost 160-163, Figures 9.A-6) and would be visible (medium contrast) to travelers in 455 vehicles daily as well as from the town of Enterprise, Utah. The powerlines would parallel highway U-27 (mileposts 44-85, Figure 9.A-5) and would be visible (low to high contrast) to travelers in 140 vehicles daily. It would be routed through the scenic, sensitive Mountain Meadow area (mileposts 161-178, Figure 9.A-6) and would degrade aesthetic values (high contrast).	The Lynndyl to Gypsum Junction segment of the California Transmission System would cross 13 highways in areas of low quality scenery. Near the plant site, both California routes would parallel Highway 272 (milepost 0-10, Figures 8.2-B and C) and would be visible to travelers in 200 vehicles daily. The Lynndyl to Toquop Junction line would parallel Utah Highway 18 (U-18) (milepost 161-164, Figure 8.2-B) and would be visible (medium contrast) to travelers in 455 vehicles daily as well as from the town of Enterprise, Utah. It would be routed through the scenic, sensitive Mountain Meadow area (mileposts 162-179, Figure 8.2-B) and would degrade aesthetic values (high contrast).
In Nevada, the Toquop Junction to Gypsum Junction segment would parallel I-15 (mileposts 236-266, Figure 9.A-6 and would be visible (medium to high contrast) to travelers in 6,645 vehicles daily.	In Nevada, the Toquop Junction to Gypsum Junction would parallel I-15 (mileposts 45-75, Figure 2-1) and would be visible (medium to high contrast) to travelers in 6,645 vehicles daily. In Nevada, the Lincoln (Highland Jct.) Junction to Gypsum Junction segment would parallel U.S. 93 (mileposts 70 to 115) and would be visible (high contrast) to travelers in 655 to 700 vehicles daily.
The transmission system would be visible from 6 adjacent recreation attractions or areas of high scenic quality.	The Lynndyl to Highland Junction line would cross Utah's West Desert, an undeveloped area having open space value (mileposts 55-130, Figure 8.2-C). The

TABLE 9.A-3 (continued)

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
Attraction — Anti. Cont. Gunlock Res. St. Beach — Low Joshua Tree Nat. Area — Med. Muddy Mountains — Med. Pine Valley Mtns. — High Red Mountain — Low Ripple Arch — Low	Lynndyl to Toquop Junction line would cross through Utah's Black Rock and Escalante Desert, undeveloped areas having open space values (mileposts 25-80, 118-138). The California transmission system would be visible from 15 adjacent recreation attractions or areas of high scenic quality. Attraction — Anticipated Contrast Coyote Hills Obsidian Beds — High Crystal Peak — Low Desert Nat. Wildlife Ref. — Med. Dominguez-Esc. Trail — High Fossil Mountain — High Gunlock Res. St. Beach — Low Highland Mountains — Med. Joshua Tree Nat. Area — Med. Muddy Mountains — Med. Pahranagat Nat. Wldlf. Ref. — Med. Pahvant Butte — Low Pine Valley Mountains — High Red Mountains — Low Ripple Arch — Low Tabernacle Hill — Low
Recreational values would be reduced for some visitors.	Recreational values would be reduced for some visitors.
The transmission system would be visible from portions of an area with potential for wilderness designation: Area — Anticipated Contrast Muddy Mtns. (WSA NV-050-IPP-07) — Medium	The transmission system would be visible from portions of 11 areas with potential for wilderness designation: Area — Anticipated Contrast King Top (WSA UT-050-070 — High Fortification Range (WSA NV-040-177) — Low Wah Wah (WSA UT-050-073) — Low Arrow Canyon Range (WSA NV-050-IPP-09) — Medium Delamar Mountain (WSA NV-050-IPP-07) — High Muddy Mountain (WSA NV-050-IPP-15) — Med. Desert Game Range — Low

TABLE 9.A-3 (continued)

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
	Evergreen (WSA NV-050-01R-16) Low Wildlife 1 (WSA NV-050-0201) Low Wildlife 2 (WSA NV-050-0216) Low Wildlife 3 (WSA NV-050-0217) Low
Land Use	Land Use
No impacts identified.	The construction of power transmission lines would impair wilderness character (i.e., naturalness) and designation suitability adjacent to the proposed power transmission system in the following BLM Wilderness Study Areas: 1) NV-050-IPP-07, Delamar Mountain (approximately 200 feet within area for 14 miles), 2) NV-050-IPP-15, Muddy Mountain (approximately 339 feet into the unit for 4 miles) and 3) UT-050-070, King Top (approximately 1/2 mile within area for 4 miles). However, any impairment of wilderness suitability would not be allowed prior to Congressional decision on these areas.
Land Use Plans and Controls	Land Use Plans and Controls
The Western Utah Alternative would conflict with various land use plans as cited below:	The proposed transmission routes would conflict with various land use plans which are cited below:
Cedar City District, Utah (BLM)	Cedar City District, Utah (BLM)
Buckskin-Mud Spring Management Framework Plan Alternate route does not follow established utility corridors for 27 miles between mileposts 130-157 (Figure 9.A-6).	Buckskin-Mud Spring Management Framework Plan Proposed transmission route does not follow established utility corridors along its full length (38 miles) within the planning unit, (mileposts 120-158, Figure 8.2-C).
Las Vegas District, Nevada (BLM)	Richfield District, Utah (BLM)
The Virgin Valley MFP does not identify this route as a utility corridor.	House Range (Topaz) Management Framework Plan BLM proposes to locate "North Sevier Overlook" adjacent to U.S.

TABLE 9.A-3 (concluded)

Western Utah Alternative	Lynndyl to Gypsum Junction Proposal
	Highway 50-6 and west of Sevier Lake. This site is near proposed IPP route Lynndyl-Highland Junction, Route 1 (milepost 51). Eliminate or prevent developments not compatible with open space values. These projects would include such things as powerlines, fences, buildings, and structures that break the skyline.
Indian Reservation	Indian Reservation
The alternative route would avoid potential Moapa Indian Reservation Lands.	The proposed route would pass through an area that has been proposed to Congress for inclusion into the Moapa Indian Reservation (Senate Bill 1135 and House Bill 4418). Should this inclusion be made prior to granting of rights-of-way for the transmission lines, the rights-of-way would have to be negotiated with the Moapa Tribe.
Mitigation	
Animal Life	Animal Life
No impacts identified.	Impacts to mule deer would be mitigated as indicated in Chapter 4, B-4 (Vol. I) and Section E 2-b (Vol. II).
Impacts to desert tortoise and Gila monster would be mitigated as indicated in Chapter 4, B-4 and 5 (Vol. and Section E, 2-b and c (Vol. II).	Impacts to desert tortoise and Gila monster would be mitigated as indicated in Chapter 4, B-4 and 5 (Vol. I) and Section E, 2-b and c (Vol. II).

ADDITIONAL INFORMATION: EASTERN NEVADA ALTERNATIVE

As an alternative to crossing the Dixie National Forest in southern Utah, two 500-kV d.c. lines could be routed into eastern Nevada (Figure 9.A-7). Under this alternative, the lines would be placed in the western Utah alternative route (Figures 9.A-4 and 9.A-5) up to milepost 121 then follow the Union Pacific Railroad to the southwest for approximately 8 miles to join the Salt Wash West Corridor alternative route (Figure 2-C and 2-D) at milepost 53.

The existing environment of this route is summarized on the following figures:

Figure No.	Mileposts	Segment Name
9.A-5	0-121	Western Utah Alternative
8.8-14	15-20[a]	Union Pacific Railroad Segment[a]
9.2-C	53-113	Jack Henry Junction to Lincoln Junction via Dry Valley
2-D	0-126	Lincoln Junction to Gypsum Junction

[a]A profile for this 8 mile segment has not been developed. The environment is the same as described for mileposts 15-20 of the Lund Alternative (Figure 8.8-14).

The environmental impacts, applicable mitigation, and unavoidable adverse impacts of this alternative are presented on the following pages:

Name of Alternative	Page Numbers
Western Utah Alternative	9-151 to 9-161
West Corridor Alternative	8-36 to 8-45

GRAPHICS NOTES:
The West Corridor via Dry Valley isn't in the book. The eight miles along UP isn't depicted.

EASTERN NEVADA ALTERNATIVE

FIGURE 9.A-7

SECTION 4--CHAPTER 9

ADDENDUM

Representatives of the Intermountain Power Project made firm project proposals by filing right-of-way applications and other documents with the BLM Utah State Director on November 4, 1976. Applications requested use of public lands for the power generating complex, transmission routes, sites for water storage, reservoirs, water well fields, pipelines, route for coal haul railroad, microwave communication stations, and a new town site. These applications were supplemented with IPP's Engineering and Feasibility Study Reports--four volumes dated October, 1976 and a fifth volume dated May, 1977. In April of 1977, IPP applied for the use of public land administered by the Bureau of Land Management for the New Town town site.

C. PURPOSE AND NEED FOR PROJECT

The primary purpose in constructing IPP would be to provide electrical energy to meet the projected load growth for ICPA, Utah Power and Light, and participating California municipalities. As lead agency for fulfilling the requirements of the California Environmental Quality Act, the Los Angelel Department of Water and Power has prepared a detailed discussion of purpose and need. Their submission appears in Appendix I-1.

Information obtained from a representative of the California Energy Resources Conservation and Development Commission by the telephone, September 14, 1979 indicated that power needs projections remain unchanged in California. The 1979 Biennial Energy Needs Report is being prepared and will be published later this year. He stressed that approval of the new report by the commission will come only after lengthy public hearings, study by staff, industry, and regulatory agencies committees (Hook, 1979).

Contact was also made with representative of the Utah Public Service Commission requesting an update of assessments concerning power needs and forecasts for the Utah participants in IPP. The Utah representative of the commission indicated that the earlier comments of February 15, 1977 were the best available information and did not propose to update it. A letter might be written by the PSC to confirm the 1977 letter.

Figure 1-2 compares participant projected peak demand and their generating capabilities with and without IPP. The need for IPP's generating capacity is based on forecasts which each participant has prepared for their own system, using their own techniques and judgment suitable to their operation and circumstances. ICPA and UP&L have indicated to the Utah Public Utility Commission the need for additional generating capacity in order to meet their projected load growth. The California Energy Commission has independently developed its own comparable load forecasts for the California municipalities. With the exception of UP&L, the total forecasted growth for the participants' combined system annual peak demand from 1985 to 1995 is 5,029 MW, representing a combined compound growth rate of about 4.2 percent.

D. APPLICANT'S PROPOSAL

The IPP generating station would consist of four 750 MW steam-electric generating units, each powered by a pulverized coal-fired boiler. Commercial operation of the first generating unit would begin July, 1986. The remaining three units would begin operating at one year intervals. Estimated project life is 35 years.

The generating station would require approximately 8.12 million tons of coal annually and in excess of 300 million tons of coal during its projected life. Coal would come from Central Utah coal fields, such as the Wasatch Plateau and the Emery coal fields, and would be transported to the site by a proposed railroad.

Tables 1-2 through 1-4 summarize the approximate magnitude of IPP's proposed activities. Figure 1-3 shows IPP's proposed development schedule.

1. Raw Materials Sources and Requirements

IPP believes it has identified sufficient quantities of raw materials to operate the proposed facility during the life of the project. Raw materials include those which would be necessary for plant operation (coal, water, and lime) and those necessary for construction (sand and gravel or "borrow material").

a. Coal

The estimated coal requirements during the project's life would be about 308 million tons at an average annual consumption rate of 8.12 million tons. The maximum yearly total would be 9.93 million tons. These figures are based on average lifetime heating values of 11,560 Btu/lb. and a 75 percent load factor. The maximum demand for four boiler units is estimated to be 1,600 tons of coal per hour.

According to project proponents, firm contracts for a coal supply will not be signed until the requirements of the California Environmental Quality Act are met. Coal would most likely be obtained, however, from the Central Utah Coal Fields as shown on Figure 1-4. The projected coal supply would have the following range of properties:

Heating Values Btu/lb., wet	8,930.0	-	12,970.0
Sulfur content, Percent	0.3	-	1.0
Ash content, Percent	4.4	-	12.5
Moisture Percent	4.0	-	15.0

Trace elements are listed in Appendix I-2.

b. Water

Water for the project would be obtained from two sources in order to provide an adequate and reliable supply. Surface water would be diverted from the Fremont River and ground water would be pumped from the Navajo Sandstone aquifer. Figure 1-5 shows water source locations.

The maximum annual water supply requirement for the project would be 50,000 acre-feet. This includes cooling, industrial, construction, and municipal water supply requirements. Thirty-thousand acre-feet would come from the Fremont River and 20,000 acre-feet from the underground aquifer.

Annual in-plant water consumption under normal weather conditions and at an 85 percent plant capacity factor would be 24,300 gallons per minute (gal/min) or 39,200 acre-feet per year. The design water consumption for four generating units generating at 100 percent capacity during the summer months would be approximately 33,000 gal/min.

c. Lime

A high calcium, pebble lime would be used for removing SO_2 from the flue gases and for raw water softening.

c. Water Quality Monitoring

Water quality for plant use would be monitored for both the ground water and surface water supply systems throughout the operational period of the project. Observations wells would be constructed within the plant site and would be monitored during the operational period of the project. A monitoring system would be developed by the applicant subject to approval of appropriate state and federal agencies.

d. Terrestrial Monitoring

The applicant has conducted terrestrial trace element studies to obtain baseline data at the location of the proposed power generating site. Beginning in the fall of 1974, soil, vegetation, and animal samples were collected and analyzed for over 30 trace elements.

10. Decommissioning

The continued operation of any or all parts of the project at the end of its estimated 35-year life would depend upon the needs of the participants, the relationship to other available energy sources, environmental impacts, economics, and technical viability at that time.

Because the known coal reserves in the region far exceed those needed during the estimated life of the project, the assumption is that the project facilities would be maintained, repaired, or replaced to extend the overall useful life beyond the 35 years.

As any or all of the project systems could reach a point where they would no longer serve a useful purpose for IPP or other related projects, the facilities would be abandoned or removed in accordance with the laws and regulations existing at that time. Restoration of disturbed areas would also be done in coordination with governmental agencies.

At this time, disposition of the power transmission systems at the conclusion of the project cannot be determined with any certainty. With the exception of the tower footings, which would not likely be removed, the transmission lines could be dismantled, if no longer in service, and the land permitted to return to its previous condition.

G. APPLICANT PROPOSED DESIGN FEATURES AND GOVERNMENT AGENCY STANDARD REQUIREMENTS

Project design features proposed by the applicant and standard requirements by federal, state, and local governments could reduce or eliminate impacts to the human environment. These project features and requirements are listed below:

1. Applicant Proposed Design Features

a. IPP would blend coal to achieve the required sulfur and ash content.

b. Coal dust would be controlled by:

(1) Covering conveyors.

(2) Spraying coal with water wherever coal is spilled or transferred, except at the coal silo.

Flagmen, barricades, and other safety measures would be provided as required to ensure public safety.

p. A landscape architect employed by the appropriate public land management agency would be consulted prior to construction on respective lands to select colors which help blend structures with that of the natural landscape.

2. Measures Required of the Applicant By Federal Agencies

The Federal Government has mandates to protect: threatened and endangered species and their critical habitat; historical, archaeological and paleontological resources; and wild horses and burros. Also, there are mandates to protect areas currently being managed to protect their potential for classification as wilderness areas. Other areas having special designation must also be protected. It is also assumed that sufficient funding and manpower would be available to properly enforce the required mitigating measures herein.

Authority for mitigation of loss of vegetation, livestock forage, wildlife habitat, archaeological and paleontological values, and a reduction in water and air quality, aesthetics, and recreation on federal lands, is granted under the following acts.

Fish and Wildlife Coordination Act
Organic Administration Act of 1897
Reclamation Act of 1902
Preservation of American Antiquities Act of 1906
Wilderness Act of 1964
National Historic Preservation Act of 1966, as amended
Executive Order 11593 of 1971 (Protection and Enhancement of the Cultural Environment)
Archeological and Historic Preservation Act of 1974
Federal Land Policy and Management Act of 1976
The Clean Air Act as Amended 1977
The Federal Clean Water Act of 1977
Endangered Species Act as Amended 1978
Executive Order 12088 - Federal Compliance with Pollution Control Standards
Native American Indian Religious Freedom Act (Senate Resolution)
Executive Order 11990--Protection of Wetlands
Executive Order 11988--Floodplains Management
National Wildlife Refuge Systems Administration Act of 1966
Federal Air Regulations, Part 77

Federal regulatory agencies would also require compliance with safety and noise level regulations imposed by the Occupational Safety and Health Act of 1970; with the Federal Aviation Administration clearance standards, granted under authority of the Federal Aviation Act of 1958; and with grounding and clearance requirements of the National Electric Safety Code and EPA.

All mitigating measures outlined here could be modified as deemed necessary within authorized limits by the appropriate federal offical.

If the proposed project were approved, the applicant would be required to carry out the following measures on lands administered by Bureau of Land Management (BLM), U.S. Forest Service (USFS), and Bureau of Reclamation (USBR):

j. All rivers, streams, and washes would be crossed at existing roads or bridges, except at locations designated by the appropriate federal official. The applicant would be required to install culverts or bridges at points where new permanent access roads would cross live streams. Where streams are crossed by temporary roads, dirt fills or culverts would be placed and removed upon completion of the project. Any construction activity in a perennial stream would be prohibited unless specifically allowed by the appropriate federal officia All stream channels and washes would be returned to their natural state.

k. Vegetation which has been cleared due to construction or other activity associated with this project would be re-vegetated (to the extent practical) with plant species common to the site and planted in a pattern which would compliment the line, form, color, and texture of the site where designated by the appropriate federal official. Vegetation cleared during construction would be shredded and left as mulch.

l. The applicant would prepare a screening plan to minimize visual impacts from structures. The plan must be submited in writing to the appropriate federal official, to obtain approval before starting construction.

m. All trash, packing material, and other refuse would be removed from construction areas on federal land and placed in approved sanitary landfills.

n. Nonspecular conductors and compatible insulators would be installed on all transmission line systems.

o. All access roads on federal lands blocked as the result of construction of project components would be rerouted or rebuilt. Cattle guards or gates would be provided along the new access roads as directed by the appropriate federal official.

p. Intensive archaeological surveys and clearance would be required for all project sites (as specified in BLM Manual 8111.14) prior to new construction. Properties eligible for inclusion in the National Register of Historic Places would be identified in consultation with the appropriate State Historic Preservation Officer as specified in 36 CFR 800.4 and 36 CFR 63. Wherever possible, sites would be avoided. Where avoidance is not possible, mitigation of adverse effects to sites eligible for the National Register would be undertaken in compliance with 36 CFR 800. Sites discovered during construction or other activities authorized by BLM would be evaluated and managed as specified in 36 CFR 800. Memorandums of Understanding with the Utah, Nevada, California, and Arizona State Historic Preservation Officers regarding protection of cultural resources are presented in Chapter 9. The enclosed Memorandums of Understanding do not represent compliance with Section 106 of the National Historic Preservation Act but guarantee this compliance at the appropiate stages of project planning.

q. The applicant would provide funding for a qualified paleontologist who would be approved by the appropriate federal official. The paleontologist would conduct an intensive survey of all areas to be disturbed which are identified as having high potential for paleontological resources. An approved paleontologist would be available, as needed, during surface disturbance. If the paleontologist determines that paleontological values would be disturbed, construction would be halted until appropriate action could be taken.

r. In cooperation with the appropriate federal official, a fire control plan would be prepared. Internal combustion engines would be equipped with approved exhaust mufflers or spark arrestors.

s. Travel would be restricted to right-of-way and existing public roads. Cross-country motor vehicle travel would be prohibited.

t. All low voltage power transmission lines would be designed to prevent electrocution of raptors.

u. Transmission line construction would not be allowed when in conflict with existing mining and drilling operations.

v. New access roads would be closed as designated by the appropriate federal official.

w. No property acquired or developed with assistance under section 6-f of the Land and Water Conservation Fund Act shall, without the approval of the Secretary, be converted to other than public outdoor recreation uses. The Secretary shall approve such conversion only if he finds it to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions as he deems necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location.

3. Measures required of the Applicant By State and Local Entities

a. The same mitigating measures could be required on state and local government lands as on federal land. Authority is granted in the State of Utah under the Utah Code Annotated (UCA) 1953, 65-2-1 and authority is granted under the California Environmental Quality Act in the State of California.

b. The various states would require the same mitigating measures as required on federal lands for cultural resources. The California Environmental Quality Act requires IPP to enforce identified mitigation and measures on all lands regardless of ownership.

H. INTERRELATIONSHIPS WITH OTHER PROJECTS AND PROPOSALS

1. Electric Generating Facilities

During the past two decades, five coal-fired generating stations have been constructed within a region encompassing northwestern New Mexico, northern Arizona, and central Utah. In addition, the Hunter plant (Emery), a coal-fired generating complex located near Castle Dale, Utah is currently under construction. One 430 MW unit began commercial operation in 1978. Figure 1-24 shows the location of IPP interrelated generating facilities (except Allen).

The Warner Valley coal-fired generating complex is proposed on a site located about 13 miles southeast of St. George, Utah, and the Allen generating complex is proposed for a site about 20 miles northeast of Las Vegas. The proponents of the Allen and Warner Valley stations would deliver electricity to their service areas in Utah, Nevada, and southern California. The first Warner Valley generating unit could be operational by 1985 and the first Allen unit by 1986, if the needed approvals, permits, and rights-of-way are granted. An EIS for the Allen-Warner Valley Energy System is currently being prepared.

TABLE 1-17 (continued)

Project Feature	Magnitude	Authorizing Actions	Authority
New Town			
Factory Bench Site	1,080 acres public land	Transfer ownership[a] (Land Sale)	Federal Land Policy and Management Act of 1976 (PL 94-579)
Power transmission lines	Approximately 5 miles of route would cross Reclamation withdrawn land in Nevada	Issue license	Act of June 17, 1902, 32 Stat 388 as amended and supplemented
	U.S. FISH AND WILDLIFE SERVICE		
Fremont River Diversion and pipeline with pumping plant and access roads. Stream crossings with power transmission lines and railroad.	Proposed facilities would divert all surface water from Fremont River during non-irrigation seasons into Red Desert Storage Reservoir. Pipe lines would cross streams, in addition, power lines and access roads would cross four states.	Comment on Corp of Engineers permits for placement of structures and fill in navigable waters.	Fish and Wildlife Coordination Act of 1958, as amended. 72 Stat. 563; 16 U.S.C. 661 35 Seq.
	DEPARTMENT OF AGRICULTURE U.S. Forest Service (Fishlake N.F.)		
Ground Water System			
1 production and 1 observation well, also 5 miles of common corridor for access road, power line, and pipeline	Each well site would occupy 100 x 200 sq. feet; however, 2,880 acres National Forest Land are included in well field.	Grant Special Use Permit	Title V of Federal Land Policy and Management Act of 1976 (90 Stat. 2776 et seq.)
Microwave Stations			
Elkhorn Site with electronic facilities, power source and access road.	Site would occupy 50 x 50 square feet, also needed are 13 miles of underground power distribution line and 1/2 mile of access road.	Grant Special Use Permit	Title V of Federal Land Policy and Management Act of 1976 (90 Stat. 2776)
Monroe Peak Site	Facilities would occupy 50 x 50 square feet on designated communication site; power would be available from an underground extension from existing junction box. Existing access roads would be used.	Grant Special Use Permit	Title V of Federal Land and Management Act of 1976 (90 Stat. 2776)
Southern California and Utah Transmission Systems:			
Two 500-kV d.c. electrical power transmission lines within the Salt Wash to Jack Henry Junction segment, also access roads for construction and maintenance of power line. One 345 kV a.c. electrical power transmission line within the Salt Wash to Jack Henry Junction segment.	Power transmission lines would cross approximately 19 miles in common corridor within Fishlake National Forest	Grant right-of-way[a] Permit	Federal Land Policy and Management Act of 1976 (90 Stat. 2776)

3. Local Actions

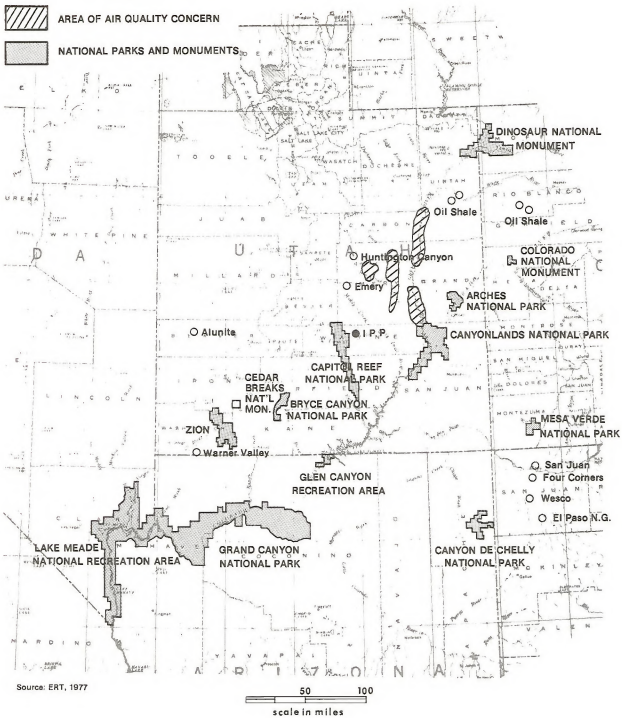
Table 1-19 is a summary of actions by local governmental entities which would be required to implement the proposal.

TABLE 1-19

Local Authorizing Actions

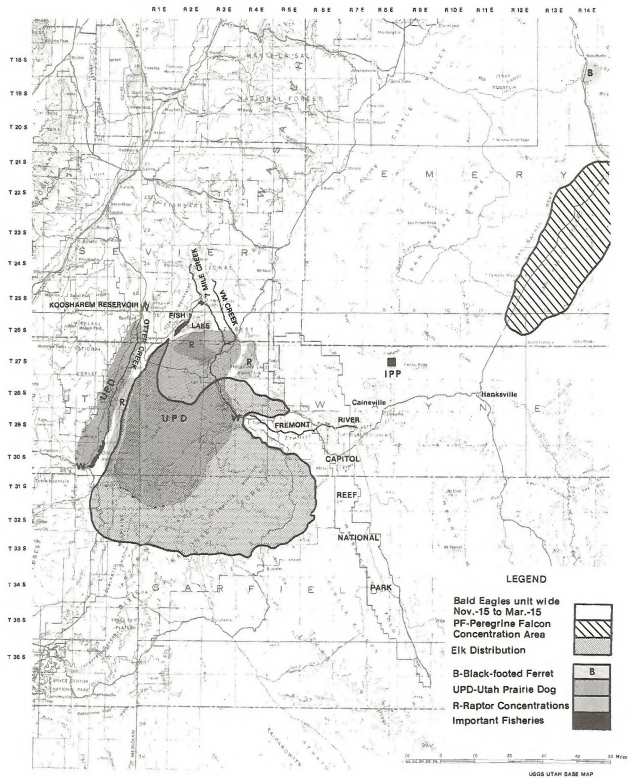
Project Feature	Magnitude	Authorizing Actions	Authority
		ARIZONA	
		Mohave County	
		County Commissioner (County Planning Commission)	
Power Transmission Line Southern California System	One transmission line 500-kV 10 miles long	Grant Construction Permit	Mohave County Zoning Ordinance.
		NEVADA	
		Clark County Commission	
Southern California System	Two 500-kV d.c. power lines, 215 miles long	Grant Use Permit	Various county regulations
		Road Department	
Southern California System	Several road crossings	Issue Encroachment Permit before transmission lines are constructed across county or municipal roads.	Various county regulations
		STATE OF CALIFORNIA	
		California Municipal Utilities	
Intermountain Power Project	3,000 MW coal-fired generating station and ancillary features.	Certify IPP Environmental Impact Report and approve participation in project.	California Environmental Quality Act of 1970, as amended.

Note: The applicant would be required to comply with all existing federal, state, and local laws and regulations.



AREAS OF AIR QUALITY CONCERN AND LOCATIONS OF OTHER ENERGY CONVERSION PROCESSES

FIGURE 2-3



DISTRIBUTION OF BIG GAME, THREATENED AND ENDANGERED SPECIES, RAPTOR CONCENTRATIONS, AND FISHERIES IN THE REGION

CHANGES OF FIGURE 2-18
FIGURE 2-16
2-36
2-42

(4) Discharge

Natural ground water discharge from the Navajo Sandstone occurs along the Muddy Creek and Dirty Devil River from 5 miles north of Hanksville to 10 miles southeast. Discharge also occurs along southern limits of the Henry Mountains near Lake Powell.

As many as 24 springs and seeps, some of which could discharge from the Navajo Sandstone, occur in the area of potential impact to ground water (see Figure 2-12). Appendix II-8 lists the springs and seeps. Caine Springs provides base flow (2.8 ft^3/s) for Salt Wash and a minor portion of the Muddy Creek flow. Figure 2-13 is a photograph of Caine Springs. Caine Spring and three seeps (Coral Canyon Seep, unnamed seep [10], Seismo Seep) are probably fed from the Navajo Sandstone and others may be. Also four wells are currently producing water from the Navajo Sandstone formation (see Appendix II-8).

(5) Ground Water Quality

During pump test investigations, water samples were taken and analyzed. Results of these analyses are summarized in Appendix II-9. Water quality varies laterally and vertically within the Navajo Sandstone. Higher quality water is found near to areas of recharge and in the upper portions of the aquifer.

2. Power Transmission Systems

Within the Utah Transmission System the Salt Wash to Emery segment would cross two perennial streams, Muddy Creek and Ferron Creek, and one intermittent stream, Rock Canyon Creek. The Lincoln Junction to Gonder segment would cross some wetlands in Steptoe Valley, parallel Willow Creek, and cross Steptoe Creek and Comins Lake.

Table 2-9 lists perennial streams which would be crossed by the Southern California transmission system. All other stream courses are intermittent or ephemeral and flow occurs mainly in direct response to rainfall and snow melt.

F. VEGETATION

1. Regional Setting

Cold desert, pinyon-juniper, mountain brush, forest, and riparian vegetation grow within the regional setting as shown in Figure 2-14 (Oosting, 1956). Appendix II-10 lists representative plant species of each vegetation type. Riparian species such as willows, cottonwoods and tamarisk are typically found near water along the Fremont River, other streams, and at springs and seeps (Foster, 1968) (Harper, et al., 1975). Riparian vegetation occupies an area about 35 feet wide on each side of the Fremont River along its entire length from the diversion site to the confluence with Muddy Creek for a total of about 200 acres. Figure 2-15 is a photograph of riparian vegetation along the Fremont River.

The Henry Mountains, southeast of the Caineville area, provide unique habitat for a number of plants which are rare or endemic to either the Henry Mountains or Utah (Welsh, 1977b).

A list of proposed endangered plant species was published in the June 16, 1976 Federal Register. Lists of candidate threatened and endangered species have also been compiled, plants on these candidate lists may later be proposed

2. Primary Project Area and Coal Haul Railroad

The vegetation within the primary project area is predominantly cold desert type (see Figure 2-14). The vegetation along the proposed railroad route is shown on Figure 2-A.

Sclerocactus wrightiae, a cactus on the 1976 proposed list of endangered plants was found in 1974 near the proposed plant site (Harper, et al., 1975). An unusual endemic (member of the sunflower family), Parthenium alpinum, occurs in the vicinity of the proposed railroad route (Welsh, 1977).

3. Power Transmission Systems

Vegetation in areas crossed by transmission line routes ranges from virtually none, on a few barren areas, to forests in the mountains, but is predominately desert types (see Figures 2-B through 2-M). The proposed route of the Southern California Transmission System crosses Joshua Tree forests in the following locations:

Geographical Area	Line Segment	Mileposts
Beaver Dam Slope	Cedar Wash-Gypsum Jct. (Figure 2-I)	0-45
Delamar Valley	Lincoln Jct.-Gypsum Jct. (Figure 2-D)	30-34
Piute Valley	Eldorado Jct.-Victorville (Line 2)(Figure 2-D)	20-30
Cima Dome	Eldorado Jct.-Victorville (Line 2)(Figure 2-J)	45-65

Available collection information from various herbaria, published and un-published literature, and field inventory records were used to map locations of listed proposed and candidate threatened and endangered plant species.

Proposed and candidate threatened or endangered plant species which occur within 2.5 miles of the proposed transmission corridors are listed in Appendix II-12.

4. Microwave System

The two proposed microwave sites would be within the regional setting. The Moroni Slope site supports cold desert vegetation such as Brigham tea, shadscale, and galleta grass. Forest vegetation occurs at the Elkhorn site. The sites have not been surveyed for threatened or endangered plant species.

G. ANIMAL LIFE

1. Regional Setting

Approximately 455 species of vertebrate wildlife, 392 of which are protected by law, are found within the regional setting. These include 33 fish species (2 protected, endangered; 18 protected, nongame and 13 protected, game), 36 species of reptiles and amphibians (all protected), 307 bird species (2 protected, endangered; 258 protected, nongame; and 47 protected, game) and 79 mammal species (64 unprotected, nongame; 3 protected, nongame; and 12 protected, game).

(a) Terrestrial Wildlife

Of the 396 species of terrestrial wildlife found in the regional setting, 61 species are game animals. Big game species in the area include elk, mule deer, pronghorn antelope, desert bighorn sheep, bison, mountain lion, and black bear. Figure 2-16 shows big game distribution. Mule deer are the most abundant big game species and the Henry Mountain bison herd (approximately 300 animals) has special significance since it is the only actively hunted herd of free roaming bison in the United States (UDWR, 1977b).

Major upland game species include chukar partridge, ring-neck pheasant, white-wing pheasant, blue and ruffed (forest) grouse, sage grouse, Merriam's turkey, Gambel's quail, mourning dove, band-tailed pigeon, cottontail rabbit, and snowshoe hare. Upland game distributions are shown on Figure 2-17. In desert areas, the distribution of upland game species often centers around water sources.

Waterfowl species such as Canada geese, snow geese, mallard, gadwall, pintail, green-winged teal, redhead, canvasback, and red breasted merganser occur throughout the region. They are primarily migratory in this vicinity. The most important nesting sites for these species are the Fremont River at the Bicknell Bottoms Wildlife Management Area, Otter Creek Reservoir, and the East Fork of the Sevier River (see Figure 2-18).

Among non-game species, predatory and fur-bearing mammals are widely distributed throughout the region and include: coyote, fox, bobcat, badgers, skunks, beaver, and muskrat. No areas of concentration have been identified for these species.

The bald eagle (endangered), peregrine falcon (endangered), inhabit the regional setting. The bald eagle is a winter resident primarily near water courses and the peregrine falcon is a wide ranging year long resident (Eyre and Paul, 1973). A black-footed ferret (endangered) sighting has been reported near Woodside, Utah and this species could conceivably be associated with prairie dog towns throughout the region (UDWR, 1977a). The Utah prairie dog (endangered) inhabits the Awapa Plateau west of Loa, Utah and Grass Valley, north of Angle, Utah (see Figure 2-17) (Collier and Spillet, 1975).

Important raptor areas (Figure 2-18) are located near Fishlake and Geyser Peak on the Fishlake National Forest where ospreys are summer residents, and golden eagles live year long. The west side of Parker Mountain is a nesting area for golden eagles (Bowden, 1977).

b. Aquatic Wildlife

Important fisheries within the region include Fish Lake; Johnson, Koosharem, Otter Creek, Forsyth, and Mill Meadow reservoirs; and many small lakes on the Aquarius Plateau, Boulder Mountain, and Thousand Lake Mountain. The most important stream fisheries include the central and upper Fremont River, UM and Seven Mile Creeks, Otter Creek and the Sevier River (see Figure 2-17). These waters support rainbow and brown trout. Some brook and cutthroat trout fishing is available. Fish Lake is one of only a few waters in Central Utah that support lake trout (Sigler and Rush, 1963), and UM and Seven Mile are two of the nine wild trout waters in Utah (UDWR, 1976a). Lake Powell is an important fishery for many warm and cold water species. Two officially listed threatened or endangered fish species, the humpback chub (endangered and Colorado squaw fish (endangered), occur within the regional setting in the Green and Colorado rivers and Lake Powell. Two species proposed as threatened

or endangered, the humpback sucker (proposed threatened) and bonytail chub (proposed endangered), are also found in these waters.

c. Wild Horses and Burros

At least 49 wild horses and 24 wild burros inhabit the San Rafael Swell and adjacent areas within the regional setting (Wilson, 1976).

2. Primary Project Area and Coal Haul Railroad

a. Terrestrial Wildlife

The proposed project area and coal haul railroad are located mainly on what can be considered typical desert habitat (Jorgensen, 1977). Sites most important to wildlife are Caine Springs, Salt Wash, the lower Fremont River, and agricultural areas near Caineville, Hanksville, and Ferron, Utah. Water sources are utilized by both game and non-game species. Waterfowl use the Fremont River, springs, and available stock ponds, for migration and some nesting. A checklist of observed animal species is found in Appendix II-13.

The peregrine falcon and bald eagle are the only endangered species found within the primary project area. There are no known nesting sites in the vicinity (Jorgensen, 1977). The endangered black-footed ferret has been observed in Emery County and could possibly be found along the proposed coal haul railroad route.

b. Aquatic Wildlife

No game fish or threatened and endangered species of fish exist within the primary project area. There are no unique or rare species of micro-organisms or aquatic life in the lower Fremont River, Caine Springs, or Salt Wash (Westinghouse, 1976; McAda, et al., 1977).

3. Power Transmission Systems

a. Terrestrial Wildlife

The habitat of a number of big game species would be crossed by the proposed transmission lines (Figures 2-B through M). In Utah, critical deer winter range would be crossed on the Fishlake National Forest; in Grass Valley, south of Circleville, Utah; in Dog and Buckskin Valleys; and between Kanarraville and Leeds (Figures 2-B through D). In Nevada, critical deer winter range would be crossed near Mahogany Mountain and in Muleshoe Valley. Critical elk winter range would also be crossed near Dog Valley, Utah. Potential year long bighorn habitat would be crossed in the Beaver Dam Mountains, in Utah (Figure 2-D), and existing bighorn habitat would be crossed at several locations in Nevada and California (Figures 2-E, F, and H through K).

The proposed powerlines would pass through about 3,500 acres of sage grouse habitat in Forsyth Valley on the Fishlake National Forest (USFS, 1977), and about 15,000 acres of nesting and brooding areas in Dog Valley, west of Circleville, Utah (Figure 2-B). The route would cross directly across a known sage grouse strutting ground in this area (BLM, 1977a).

Threatened and endangered species which may occur along the proposed routes are the bald eagle (endangered), the American peregrine falcon (endangered), and the Utah prairie dog (endangered). Concentration areas for winter-

b. Utah Transmission System

The proposed transmission system route traverses cultural areas which include the Paleo-Indian, Desert Archaic, Fremont (Sevier, Parowan, and San Rafael variants), Southern Paiute, and Northern Ute.

Based on a sample inventory, 176 prehistoric and historic sites were recorded along the proposed transmission line routes (Fowler, et al., 1978a; Nielson, 1976). Twenty-five of these sites are included in or meet the criteria for inclusion in the National Register of Historic Places. Figures 2-B, C, H, L, and M show the approximate locations of the sites.

The transmission lines would not be visible from any sites currently listed on the National Register of Historic Places (National Register listings as of April, 1979).

I. RECREATION AND AESTHETICS

1. Regional Setting

a. Recreation

Major recreation attractions are listed on Table 2-10. These include the seven reservoirs or lakes shown on Figure 2-19 which provide water-based recreation.

Municipal recreation facilities are listed on Table 2-11. There are none in the Hanksville-Caineville area. Minimal municipal recreation standards (numbers of recreational facilities per person) (BOR, 1967), are not currently met throughout the regional setting. Other developed recreation sites (camping and picnicking) and their visitor use are listed on Table 2-12 and their locations are shown on Figure 2-20.

Dispersed recreational activities that occur in the region include hunting for elk, deer, antelope, upland game, waterfowl, and non-game animals, fishing, rockhounding, trapping, sightseeing, horseback riding, backpacking, hiking, water based activities, off-road vehicle use, camping, and picnicking. Because of the low population density and significant amount of federal land, most of the region is available for dispersed recreational use.

b. Aesthetics

The region's scenic character is one of vast open-space and dramatic variation in landform, vegetation, and color. The landscape includes a variety of sparsely vegetated deserts, heavily forested mountains, mesas, buttes, ruggedly dissected badlands, and extremely colorful, unusual canyons and rock formations carved from rivers that drain the region's interior. The regional setting includes such high quality scenic areas as Capitol Reef National Park, Canyonlands National Park, Arches National Park, Dixie National Forest, Fishlake National Forest, the San Rafael Swell, Natural Bridges National Monument, Goblin Valley State Park, and Glen Canyon National Recreation Area. The BLM proposed Hondu Primitive Area on the San Rafael Swell borders the primary project area and is within 5 miles of the proposed plant site.

TABLE 2-13

Recreation Attractions and Areas of High Scenic Quality
Along the Proposed Power Transmission Systems

Map Reference Number	Name of Attraction	Line Segment	Position of Route Relative to Recreation Attraction
1.	Hondu Proposed Primitive Area[a]	Salt Wash to Emery	Proximate
2.	Fremont River Complex[a]	Salt Wash to Jack Henry	Crosses area
3.	Thousand Lake Mountain[a]	Salt Wash to Jack Henry	Crosses area
4.	Otter Creek Reservoir	Salt Wash to Jack Henry	Proximate
5.	Pine Valley Mountain Foothills (includes a scenic overlook and Red Cliffs Recreation Area)[a]	Jack Henry to Cedar Wash	Crosses area
6.	Joshua Tree Natural Area[a]	Cedar Wash to Gypsum Junction	Proximate
7.	Red Mountain[a]	Jack Henry to Cedar Wash	Proximate
8.	Virgin River Recreation Lands[a]	Cedar Wash to Gypsum Junction	Proximate
9.	Muddy Mountains[a]	Cedar Wash to Gypsum Junction	Proximate
10.	Cave Lake State Park[b]	Lincoln to Gonder	Proximate
11.	Commins Lake	Lincoln to Gonder	Proximate
12.	Ward Charcoal Ovens State Park	Lincoln to Gonder	Proximate
13.	Highland Mountains[a]	Lincoln to Gonder	Proximate
14.	Echo Canyon State Recreation Area[a, b]	Jack Henry to Lincoln	Proximate
15.	Cathedral Gorge State Park[a, b]	Jack Henry to Lincoln	Proximate

TABLE 2-13 (concluded)

Map Reference Number	Name of Attraction	Line Segment	Position of Route Relative to Recreation Attraction
16.	Panaca Charcoal Kilns[a]	Jack Henry to Lincoln	Crosses area
17.	Mahogany Mountain	Jack Henry to Lincoln	Crosses area
18.	Pahranagat National Wildlife Refuge[a]	Lincoln to Gypsum	Proximate
19.	Desert National Wildlife Refuge[a]	Lincoln to Gypsum	Proximate
20.	Sunrise Mountain[a]	Lincoln to Gypsum	Crosses through
21.	Lake Mead National Recreation Area[a]	Gypsum to Victorville Line 2	Proximate
22.	Cima Dome[a]	Eldorado to Victorville Line 2	Crosses through
23.	Devils Playground[a]	Eldorado to Victorville Line 2	Crosses through
24.	Pisgah Crator[a]	Eldorado to Victorville Line 2	Crosses through
25.	Sidewinder	Eldorado to Victorville Line 2	Crosses through

[a]Area of high quality (Class A) scenery.
[b]Parks acquired or developed with monies from the Land and Water Conservation Fund.

	Federal	State	Unincorporated Towns	Other Private	Total
Acres	851,264	92,960	6,000	4,400	954,624
Percent	89%	10%	.7%	.3%	100%

Land use categories, by acres, in Wayne County east of Capitol Reef National Park are:

	Open Range	Forest	Urban	Agricultural	Waste/barren	Total
Acres	629,423	100	85	1,174	232,842	954,624
Percent	66%	.01%	.01%	.01%	34%	100%

Acreages of irrigated land are Hanksville--440 acres, Caineville--434 acres, Notom--300 acres (Fremont River Study, 1975).

The Soil Conservation Service has not completed an inventory of prime and unique farmlands in Wayne County, Appendix II-15 defines prime and unique farmlands.

There are no designated wilderness or primitive areas within the regional setting. Link Flat (BLM) is the only designated natural area. United States Forest Service (USFS) administered lands have been evaluated for wilderness values in the Roadless Area Review and Evaluation II (RARE II). The RARE II Final Environmental Statement (FES) recommends two areas within the regional setting for wilderness designation. The FES recommends all other RARE II areas in the regional setting as non-wilderness. Portions of four National Park Service Wilderness Proposals are within the regional setting. BLM is presently reviewing public lands under its jurisdiction for wilderness values, and has identified in the regional setting one wilderness study area (WSA) and 28 roadless units that may have wilderness character. Appendix II-16 defines wilderness terms and describes the BLM wilderness review process. Five of the areas undergoing BLM wilderness review have been previously identified as having potential for Primitive Area designation. Three rivers in the regional setting have been identified as having potential for Wild and Scenic River Designation. All 33 areas with potential for special designation will be protected until further studies and final determinations are made. Table 2-14 lists the areas with potential for wilderness or other special designation and Figure 2-25 shows their locations, but boundaries are not definite.

The major highway through Wayne County is Utah Highway 24. It was reclassified from a secondary to a primary highway route in 1976. Approximately 15 miles of U-24 is located within Capitol Reef National Park. The design speed for most of this 15-mile section of winding, narrow 2-lane, scenic highway is 45 miles per hour.

The 1975 Traffic Volume Map prepared by the Utah Department of Transportation shows an average daily traffic (ADT) count of 320 vehicles per day on Utah Highway 24 just east of Capitol Reef National Park. This traffic count includes a mid-range percentage of 15 percent (48 ADT) out-of-state vehicles and 10 percent (32 ADT) heavy trucks. Summer traffic through the park area is mostly tourist traffic.

TABLE 2-14

Areas With Potential for Wilderness or Other Special Designation

Location[a]	Name	Potential Designation	Decision Document Reference and Date
1.	Fishlake Mountain (4-307)[b]	Wilderness	RARE II Final Environmental Statement, January, 1979
2.	Capitol Reef National Park (NP-906)	Wilderness	Capitol Reef National Park Wilderness Proposal, 1974
3.	Arches National Park (NP-900)	Wilderness	Arches National Park Wilderness Proposal, 1974
4.	Canyonlands National Park (NP-905)	Wilderness	Canyonlands National Park Wilderness Proposal, 1974
5.	Woodenshoe-Oark Canyon (4-436)	Wilderness	RARE II Final Environmental Statement, January, 1979
6.	Glen Canyon National Recreation Area	Wilderness	Glen Canyon National Park Wilderness Proposal, 1976
7.	Little Rockies (UT-050-247)	Primitive and Wilderness	Henry Mtn P.U., 1975 BLM Utah Final Initial Wilderness Inventory, August, 1979.
8.	Dirty Devil River	Wild and Scenic River	Henry Mtn. P.U., 1975
9.	Dirty Devil (UT-050-236)	Wilderness	Accelerated Dirty Devil Wilderness Inventory, March 8, 1979.
10.	Hondu-Muddy Creek (WSA-UT-060-007)	Primitive and Wilderness	Last Change P.U., 1975 IPP Accelerated Wilderness Review, September, 1979
11.	Muddy Creek	Wild and Scenic River	Last Chance P.U., 1973
12.	San Rafael Reef	Primitive and Wilderness	San Rafael Planning Unit, Unit Resource Analysis
13.	Mexican Mountain (UT-060-054	Primitive and Wilderness	San Rafael Planning Unit, Unit Resource Analysis BLM Utah Final Initial Wilderness Inventory, August, 1979.
14.	Sids Mountain (UT-060-023)	Primitive and Wilderness	San Rafael Planning Unit, Unit Resource Analysis BLM Utah Final Initial Wilderness Inventory, August, 1979.
15.	San Rafael River	Wild and Scenic River	San Rafael Planning Unit, Unit Resource Analysis
16.	North Big Ridge (UT-060-026)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
17.	Chute Canyon (UT-060-028)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.

18.	Devil's Canyon (UT-060-025)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
19.	Horseshoe Canyon (UT-050-237), Ut-060-045)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
20.	Blue Hills-Mt. Ellen (UT-050-238)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
21.	Bull Mountain (UT-050-242)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
22.	Ragged Mountain (UT-050-244)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
23.	Mt. Hiller (UT-050-249)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
24.	Mt. Pennell (UT-050-248)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
25.	Long Canyon (UT-050-233)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
26.	Colt Mesa (UT-040-074)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
27.	Fremont Gorge (UT-050-221)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
28.	Steep Creek (UT-040-061)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
29.	North Escalante Canyon Roadless Area[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
30.	The Gulch Roadless Area[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
31.	Fiddler Butte (UT-050-241)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
32.	Cheese Box and Hideout Canyon (UT-060-191)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.
33.	Harmony Flat (UT-060-194)[c]	Wilderness	BLM Utah Final Initial Wilderness Inventory, August, 1979.

[a]Refers to numbers on Figure 2-25.

[b]Numbers in parentheses are the reference numbers of the areas as designated in the decision documents.

[c]These areas were identified from BLM's wilderness review after the DES was printed. They are therefore not shown on Figure 2-25 of the FES, but are shown on BLM's Final Initial Wilderness Inventory State of Utah Map, available at all Utah BLM offices.

2. Primary Project Area and Coal Haul Railroad

The entire primary project area is allotted to livestock grazing. Approximately 43 stockmen hold permits for 3,913 cattle and 150 sheep on BLM allotments located partially within the primary project area and stockmen hold permits for 370 cattle on one Forest Service allotment (Partridge, 1977).

The local Morrison formation contains deposits of uranium. Though several mining claims have been staked, there are no producing mines in the area. Small quantities of coal, bentonite clay, sand and gravel have been taken from the area. This use is sporadic and no production data are available. Thirty-three mining claims have been staked at the Factory Bench town site.

BLM administered lands within the primary project area have been reviewed for wilderness values, and were determined not to possess wilderness character. Appendix II-17 describes the accelerated wilderness inventory used to make this determination.

Location of various land use categories crossed by the proposed railroad are shown on Figure 2-A. BLM administered lands directly associated with the proposed railroad have been reviewed for wilderness values and were determined to lack wilderness character. The railroad would pass near Muddy Mountain WSA UT-060-007 (within the proposed Hondu Primitive Area).

3. Power Transmission Systems

The proposed transmission lines cross five land use categories--open range, forest, urban, agricultural, and barren. The location of these are found on the environmental profiles, Figures 2-B through 2-M. Even though areas of potentially valuable mineral resources are along the proposed power transmission systems, no active mining or drilling operations have been identified within the routes.

The power transmission systems would pass near two areas that have been recommended for wilderness designation by the Forest Service (RARE II Final Environmental Statement). Other RARE II areas that would be crossed by the transmission systems have been recommended for non-wilderness in the FES. The systems would pass near a U.S. Fish and Wildlife Service Wilderness proposal. The systems would pass near 28, and through 5, Wilderness Study Areas (WSA) that have been identified by the BLM. The systems would also pass through one uninventoried BLM roadless unit. Table 2-15 lists areas with potential for wilderness designation and Figure 2-26 shows their locations.

4. Microwave Stations

The Moroni microwave station would be located in open range, while the Elkhorn would be located on forested lands. The Moroni station would be located within the proposed Hondu Primitive Area.

TABLE 2-15

Areas With Potential for Wilderness Designation Along Proposed Power Transmission System

Map Reference Number	Administering Agency	Name of Area	Proposed Transmission System Segment	Location of Proposed T/L Segment to Identified Area	Documentation
1.	USFS	4-307 Fishlake Mountain	Salt Wash to Jack Henry Junction	Proximate[a]	RARE II Final Environmental Statement January, 1979
2.		4-259 Pine Valley Mountain	Jack Henry Junction to Cedar Wash	Proximate	RARE II Final Environmental Statement January, 1979
	BLM				
11.		WSA Muddy Creek (UT-060-007) (Proposed Hondu Primitive Area)	Salt Wash to Emery	Proximate	IPP Accelerated Wilderness Inventory March, 1979 Last Chance P.U., 1975
12.		WSA UT-040-046	Jack Henry Junction to Cedar Wash	Proximate	IPP Accelerated Wilderness Inventory, March, 1979
13.		WSA Far South Egans NV-040-172	Lincoln Junction to Gonder Substation	Corridor is approximately 1/2 mile within WSA milepost 55-58 (see Figure 2-M)	IPP Accelerated Wilderness Inventory March, 1979
14.		WSA Mt. Grafton NV-040-169	Lincoln Junction to Gonder Substation	Corridor is approximately 1/4 to 1/2 mile within WSA milepost 65-77 (see Figure 2-M)	IPP Accelerated Wilderness Inventory March, 1979
15.		WSA South Egan Range NV-040-168	Lincoln Junction to Gonder Substation	Proximate	IPP Accelerated Wilderness Inventory March, 1979
16.		Roadless unit:[c] NV-040-123 NV-040-123	Lincoln Junction to Gonder Substation	Corridor is 1/4 mile within unit milepost 77-85 (see Figure 2-M)	BLM Nevada Wilderness Inventory, August, 1979
17.		WSA UT-040-057 AZ-010-004	Cedar Wash to Gypsum Junction	Corridor is 330 feet within WSA milepost 1-10 (see Figure 2-1)	IPP Accelerated Wilderness Inventory, March, 1979
18.		WSA Arrow Canyon Range NV-050-IPP-09	Lincoln Junction to Gypsum Junction	Proximate	IPP Accelerated Wilderness Inventory, March, 1979

TABLE 2-15 (concluded)

Map Reference Number	Administering Agency	Name of Area	Proposed Transmission System Segment	Location of Proposed T/L Segment to Identified Area	Documentation
19.		WSA Delamar Mountain NV-050-IPP-07	Lincoln Junction to Gypsum Junction	Corridor is 200 feet within WSA milepost 57-71 (see Figure 2-0)	IPP Accelerated Wilderness Inventory, March, 1979
20.		WSA Muddy Mountain NV-050-IPP-15	Cedar Wash to Gypsum Junction	Corridor is 330 feet within WSA milepost 85-89 (see Figure 2-1)	IPP Accelerated Wilderness Inventory, March, 1979
21.		WSA McCullough Mountains NV-050-IPP-17	El Dorado Junction to Victorville Substation northern and southern lines	Proximate	IPP Accelerated Wilderness Inventory, March, 1979
22. 23. 24. 25. 27. 28. 29. 30.		WSA: 225A 225 222 222A 228 221 221A 242	El Dorado Junction to Victorville Substation--northern line	Proximate	California Desert Wilderness Inventory, March, 1979
31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41.		WSA: 266 238B 245 244 249 243 250 251A 251 252 207	El Dorado to Victorville Substation--southern line	Proximate	California Desert Wilderness Inventory, March, 1979
42.	U.S. Fish and Wildlife Service	Desert Game Range	Lincoln Junction to Gypsum Junction	Proximate	Desert Game Range Wilderness Proposal
43.	BLM	WSA[d] Evergreen NV-050-01R-16	Lincoln Junction to Gypsum Junction	Proximate	IPP Accelerated Wilderness Inventory 2, July, 1979
44.	BLM	WSA[d] Wildlife 1 NV-050-0201	Lincoln Junction to Gypsum Junction	Proximate	IPP Accelerated Wilderness Inventory 2, July, 1979
45.	BLM	WSA[d] Wildlife 2 NV-050-0216	Lincoln Junction to Gypsum Junction	Proximate	IPP Accelerated Wilderness Inventory 2, July, 1979
46.	BLM	WSA[d] Wildlife 3 NV-050-0217	Lincoln Junction to Gypsum Junction	Proximate	IPP Accelerated Wilderness Inventory 2, July, 1979

Note: See Figure 2-27.

[a]Proximate is defined as within 5 miles of the proposed power transmission line routes.

[c]Unit was not inventoried during the IPP accelerated wilderness inventory because of its location contiguous to RARE II Unit #4-370 that has since been recommended as non-wilderness in the RARE II Final Environmental Statement. The unit has been identified as possibly having wilderness character and will be intensively inventoried.

[d]These areas were identified from BLM's wilderness review after the DES was printed. They are therefore not shown on Figure 2-26 of the FES, but are shown on the Nevada BLM Wilderness Bulletin, July 25, 1979--available from BLM's Las Vegas District.

K. LAND USE PLANS AND CONTROLS

1. Regional Setting

Wayne County has a master plan dealing with general land uses and county goals, but lacks an adopted zoning ordinance to enforce these land uses and regulate development. If IPP were to locate in the county, the Wayne County Planning Commission plans to draft and adopt a zoning ordinance designed to deal with any projected growth and development (Seibert, 1979).

2. Primary Project Area and Coal Haul Railroad

The primary project area is within three BLM planning units (Henry Mountain, Forest and Last Chance), and a portion of the Fishlake National Forest, shown on Figure 2-27. Management Framework Plans have been prepared for the five BLM units. The Forest Service Land Management Plan is incomplete at this time. The location of planning units along the proposed railroad is shown on Figure 2-A.

3. Power Transmission Systems

Table 2-16 lists the status of planning units on federal lands and the responsible federal agency along the proposed transmission systems (Thurgood, 1977). Figures 2-B through 2-M show the location of these plans and areas of special concern.

The transmission lines cross several zoning categories. All areas are either unzoned or zoned "rural-open space-agricultural," except near Victorville, California which is "urban."

L. HUMAN RESOURCES

1. Regional Setting

Data for this portion of the socioeconomic description was provided by the State of Utah, Office of the State Planning Coordinator. Even though a share of the project's social and economic consequences would occur throughout an area surrounding Wayne County, the geographic area of concern for the socioeconomic analysis of the Salt Wash site is Wayne County, where most of the project's direct impacts would be experienced.

a. Population

Wayne County's population fell from 1,728 in 1960 to 1,483 in 1970. Since 1970, by contrast, it has increased at an average annual rate of 2.71 percent and had reached an estimated 1,800 by 1977 as shown on Table 2-17.

TABLE 2-23

Existing Municipal Water Supply Systems in Wayne County

	Communities			
	Hanksville	Loa	Bicknell	Torrey
Present Number of Hookups	30	200	175	70
Additional Hook-ups Possible with Present System	0	79	275	5
Hookups Possible With Water Rights	--	384	481	849
Storage Capacity	13,000 gal.	223,200 gal.	300,000 gal.	60,000 gal.
Status of System	Sub-standard	Meets state standards	Meets state standards	Meets state standards

Source: UPC, 1978.

N. FUTURE ENVIRONMENT WITHOUT THE PROPOSED PROJECT

1. Climate and Air Quality

Without other major developments in the area, air quality would remain unchanged in the region of the Salt Wash site.

2. Topography, Geology, Minerals, and Paleontology

Topography, geology, and minerals would remain relatively unchanged. Mineral exploration would continue. Paleontological resources are non-renewable. Rockhounding and fossil collecting are popular hobbies. As populations in most of Utah increase and more people use ORVs to obtain access to remote areas, paleontological resources will continue to be destroyed. Natural weathering of fossils will also continue.

3. Soils

a. Regional Setting and Primary Project Area

The soil resources within this area would remain basically the same as described under existing environment.

b. Power Transmission Systems

Soils along the transmission routes would remain unchanged except where urban expansion around Cedar City, and St. George, Utah; Las Vegas and Henderson, Nevada; and Victorville, California would occupy additional acreages. The amount of additional acreage occupied or disturbed is not known.

4. Water Resources

Any major water development in the Fremont River Basin is unlikely without an industrial development.

5. Vegetation

a. Regional Setting and Primary Project Area

A major change in the vegetation within the regional setting and primary project area would not be expected within 35 years. The previously over-grazed range in the area has been showing very gradual improvement with changes in management. This trend is expected to continue.

b. Power Transmission Systems

Along the transmission line routes, increased urbanization around present urban areas (Cedar City and St. George, Utah; Las Vegas and Henderson, Nevada; and Victorville, California) would be the major change agent. This would mean that native vegetation would be replaced by cultivated and irrigated vegetation in areas which become urbanized.

6. Animal Life

a. Regional Setting and Primary Project Area

Human population trends indicate that there will be a slight decline in the population of Wayne County over the next 35 years. The distribution of wildlife in the regional setting and primary project area should therefore remain approximately as they are at present. However, the human population is increasing along the Wasatch Front and in Emery, Carbon, and Grand Counties. Since these areas apply the majority of hunting and fishing pressure within the geographic area of concern (UDWR, 1976b), there may be a greater demand for fishing, an increased demand on the UDWR fish stocking program and a decrease in the quality of the fishing experience in the region over the next 35 years. With management and issuance of a limited number of hunting permits for deer, elk, bighorn sheep, buffalo, and antelope, numbers may increase in the future.

b. Power Transmission Systems

Continued urban expansion and population increase at Cedar City and St. George, Utah; Las Vegas and Henderson, Nevada; and Victorville, California will remove wildlife habitat. Further development at Cedar City could infringe upon the habitat of the endangered Utah prairie dog. Development at St. George could destroy some habitat for the gila monster and the desert tortoise. Expansion at Henderson and Las Vegas could expose bighorn sheep to more human disturbance. Near Victorville, historic range of the Mojave ground squirrel could be infringed upon. The environment along other portions of the transmission lines will likely remain essentially unchanged as access is already available to the majority of the proposed route.

7. Cultural Resources

Cultural resources will continue to be subject to vandalism and weathering. Vandalism will increase as recreational use increases.

8. Recreation and Aesthetics

a. Regional Setting and Primary Project Area

The regional setting environment would continue to change without the project. Population is increasing in Utah and recreation demands will also increase.

Several roads and highways within the regional setting are currently undergoing upgrading or are planned for reconstruction. This would reduce travel times and increase access to the recreation resources in the regional setting.

b. Power Transmission Systems

Some segments of the power transmission system routes will encounter moderate to more rapid growth and heavier pressure on the recreation and aesthetics resources.

(3) Prevention of Significant Deterioration (PSD) Increments

Applicable PSD increments (Class II surrounding the plant and Class I in Capitol Reef National Park) are shown in Table 3-3 and 3-4.

The Utah Bureau of Air Quality SO_2 modeling results show that Class II annual and 24-hour PSD increments surrounding the primary plant site would be exceeded (Table 3-3).

The Westinghouse, ERT, and Cramer modeling calculations show that Class II PSD increments would be met, with the exception of the 3-hr SO_2 concentration calculated by Westinghouse. Westinghouse calculated that all maximum concentrations would occur on the Moroni Slopes. Cramer's projected maximum annual, 24-hr, and 3-hr ground level SO_2 concentrations are plotted in Appendix III-3.

Each of the independent modeling groups calculated that the Class I 24 hour SO_2 PSD increment would be exceeded in Capitol Reef National Park, 9.6 miles west of the Salt Wash site. National parks are subject to Prevention of Significant Deterioration Class I under the 1977 Clean Air Act Ammendments.

The Westinghouse calculations, based on worst case coal characteristics, showed that in Capitol Reef National Park the 3-hr Class I SO_2 increment would be exceeded 12 days and the 24-hr increment would be exceeded on 7 days per year. These 7 days were days on which the 3-hr increment would also be exceeded.

The Cramer Study analyzed the possibility of exceeding Class I SO_2 increments at a number of Class I and potential Class I areas in southeastern Utah. These areas are presented in Table 3-5 along with model calculations of maximum 3-hr and 24-hr SO_2 concentrations at these Class I areas. The potential Class I areas are areas that BLM is reviewing to determine if air quality related values are worthy of Class I protection. BLM may recommend these areas to the State of Utah for Class I reclassification. It would be the state's perogative to reclassify those areas if they determined reclassification to be appropriate. The model calculations show that the IPP plant, located at the Salt Wash site, would exceed the 3-hr Class I SO_2 increment at Capitol Reef National Park, Canyonlands National Park, and Glen Canyon National Recreation Area, and the 24-hr Class I SO_2 increments at Capitol Reef National Park. These projected short-term violations at Capitol Reef National Park would occur 34 days per year.

The results of modeling calculations for particulates are also compared to the applicable PSD increments (Class II surrounding the plant and Class I in Capitol Reef National Park) in Tables 3-3 and 3-4. Appendix III-3 show the maximum calculated ground level annual and 24-hr particulate concentrations as determined by the H. E. Cramer Study (1977). The results of each of these modeling groups show that the maximum estimated particulate concentrations would not exceed the Class II increments around the IPP plant or the Class I increments in Capitol Reef National Park.

There are no PSD increments for NO_2.

(4) Ozone (Photochemical Oxidants)

There has been concern in recent years about ozone (O_3) production from power plants. Ozone concentrations in power plant plumes have been found to be lower than ambient levels near the point of emission. Ozone concentrations in the plumes increase to approximately ambient levels far downwind. In plumes with high hydrocarbon concentrations, the ozone concentration can rise to high levels. Even in such situations, the net increase in ozone is less than about 10 percent above ambient levels (Ogren, et al., 1976).

TABLE 3-5

Calculated Maximum 3-Hr and 24-Hr Ground Level SO_2 Concentrations at Existing or Potential Class I PSD Areas in Southeastern Utah

Potential Class I Area	Primary Plant Site 3-hr Concentrations (Allowable Increment 25 $\mu g/m^3$)	24-hr Concentrations (Allowable Increment 5 $\mu g/m^3$)	Minimum Distance From Each Area (mi)
Capitol Reef National Park[a]	187	24	9.6
Canyonlands National Park[a]	36	4	39.6
Arches National Park[a]	11	1	71.4
Willow Creek	5	1	81.6
Westwater Canyon	8	1	96.0
Dolores River	5	1	88.8
Desolation Canyon	6	1	60.0
Lower Green River	16	2	48.0
Mexican Mountain	11	1	40.8
San Rafael Reef	15	2	24.0
Sids Mountain	7	2	30.0

Source: Bowers, et. al., 1978b.

[a]Existing Class I areas.

would be required. Soils in the area are unstable and slumping would occur along the access roads and tower pads.

E. WATER RESOURCES

1. Regional Setting and Primary Project Area

a. Surface Water

The project would use 30,000 acre-feet of water annually from the Fremont River--which represents about 2 percent of Utah's share of Colorado River water (Olds, 1979). Other uses of the water within the State of Utah would be precluded.

It is assumed that only a small part of the proposed 20,000 acre-feet annual ground water withdrawal drains into the Colorado River; the impacts of ground water removal are discussed under the ground water section.

Water in the Fremont River is of relatively high quality during winter and would be diverted for project use. Water flowing during the summer is of poorer quality and would not be diverted by IPP. Water quality would be reduced in the Colorado River. It is estimated that the proposed water withdrawal would increase the salinity of the Colorado River at Lee's Ferry by, at most, 0.6 milligrams per liter. This would be an increase of less than 1/10 of one percent (USGS, 1976).

Withdrawing 30,000 acre-feet of water annually would remove approximately 57 percent of the river's mean annual flow as measured at Caineville. The normal streamflow would be completely diverted from the river during the period November through March, except for those periods when the flow exceeded 150 cubic feet per second (ft^3/s). The river flow below the diversion dam would be essentially zero during the winter months except for minimal flow arising from water seeping through the dam. This could be augmented by some increases in return flow from irrigated lands and from tributary inflow. During the winter months when the Fremont's flow below the diversion dam would be zero, approximately 80 percent of the Dirty Devil's flow would also be eliminated.

The new town would increase the mean annual runoff from the area (1,080 acres) for the life of the town (greater than 35 years). While this increase could be considered beneficial, the poor water quality of urban runoff could also be considered a negative impact. The impacts of the increased runoff would be dissipated a short distance from the town site.

A temporary increase in sediment supply caused by construction of the diversion dam, Red Desert reservoir, and other project components would occur until the disturbed areas have been revegetated (approximately 10 to 20 years).

b. Ground Water

Ground water would be "mined" from the aquifer because withdrawal would far exceed recharge. Figure 3-1 depicts the predicted drawdown of the water levels and the new elevation of the ground water after pumping 25,000 acre-feet annually for the project life. As shown in Figure 3-1, the water level of four existing wells could be lowered by the proposed ground water withdrawal.

The decline of ground water levels would affect springs and seeps discharging from Navajo Sandstone. Projected drawdown data shows that the new ground water surface at the end of the IPP operation would generally be below the land surface. Therefore, springs which discharge from the Navajo Sandstone under artesian pressure could be expected to cease their natural flow. For example, Caine Spring, the water quality of which indicates at least part of its flow is derived from the Navajo Sandstone aquifer, would probably cease natural

flow. One spring and three seeps, if totally originating from the Navajo Sandstone, would be expected to cease the natural flow after pumping, however, as many as 24 springs and seeps are in the area of potential impact to ground water (see Figure 2-12). IPP is committed to replace the flow at Caine Spring (see Chapter 1).

A general degradation would occur in ground water quality because ground water quality becomes poorer with depth (Hood, J., 1976). Lowering of the water level would leave water higher in mineral content.

Water levels and water quality would begin to recover as a result of natural recharge when pumping terminates. It could be expected that in excess of 50 years would be required before ground water in the area would return to present equilibrium conditions.

Blasting near srings during construction of project components could fracture aquifers and reduce or change the location of spring flows.

2. Power Transmission Systems

During construction, some increase in runoff and sediment yield could be expected in streams crossed by the proposed power transmission systems due to the establishment of impermeable surfaces (e.g. access roads) which concentrate rainfall. The loosening of relatively stable soils and rocks during excavation would also tend to increase the sediment yield of the affected streams. None of these effects would be expected to extend further than a few hundred feet from the points of origin. In addition, the effects would be limited to the construction period and reduced as the disturbed areas were revegetated.

Blasting near springs during construction of towers could fracture aquifers and reduce or change the location of spring flows.

F. VEGETATION

1. Regional Setting

The large increase in the areas population would mean an increase in recreational use of resources. Essential habitat for proposed and candidate threatened and endangered plant species in the region (Appendix II-11) could be damaged by increased recreational use (e.g., ORV). Any disturbance of unique areas could alter or destroy unique habitat for plants. Some individual plants of the proposed and candidate threatened and endangered species in the region could be destroyed. However, it is not likely that the continued existence of these species would be jeopardized.

2. Primary Project Area and Coal Haul Railroad Route

Three types of vegetation--cold desert, agricultural, and riparian--would be affected by project components in the primary project area and along coal haul railroad route. Nearly 15,012 acres of the land requested for these portions of the project are covered with sparse, cold desert vegetation. About 5,710 acres are expected to be disturbed and about 5,220 acres would remain occupied.

Approximately 40 acres of riparian vegetation would be inundated by the diversion works. Diversion of the Fremont River would inhibit growth of phreatophytes downstream from the diversion point of the diversion. The impact on this riparian vegetation (approximately 200 acres) cannot be accurately quantified, but is expected to be slight, because the water would be diverted during the winter when plants are dormant. Pumping of water from the Navajo Formation could stop natural flow at as many as 24 springs and seeps, which would result in the loss of riparian vegetation.

A cactus, Sclerocactus wrightiae, which is on the 1976 proposed list of endangered flora, could be impacted by construction of the generating station. A portion of the population on the site could be destroyed. The Red Desert reservoir and diversion works sites do not support any candidate or proposed threatened or endangered plant species (Williamson and Atwood, 1977).

The unusual endemic composite (sunflower family), Parthenium alpinum, in the vicinity of the railroad route could be reduced in number.

3. Power Transmission Systems

The Southern California Transmission System would cross approximately 79 miles of Joshua tree forests in the hot desert vegetation type as shown on Figure 2-B through 2-M. Approximately 320 acres of Joshua tree forest would be disturbed of which 14 would remain occupied.

Figure 3-2 compares acreage of vegetation types which the transmission system would cross and disturb.

Construction of the line could impact any candidate or proposed threatened or endangered plant which occurs along the routes (Appendix II-12). Any construction activity which requires modification of the soil's surface would have some effect upon vegetation. The extent of the effects are for the most part unknown, but are expected to be termporary. Individual plants of threatened or endangered species could be inadvertantly destroyed. Although there are many California plants on candidate and proposed lists of threatened and endangered flora, none are known to occur directly in the proposed routes and probably none of these would be impacted (Johnson, 1977).

G. ANIMAL LIFE

1. Regional Setting

a. Terrestrial Wildlife

The additional people which the proposed project would bring to Wayne County, Utah would increase the hunting pressure on the region's game species. There is no limit on the number of hunting permits issued for lion, bear, bull elk, and buck deer. Harvest of antlerless elk and deer, bighorn sheep, bison, and antelope is controlled.

According to Shields (1976), most deer herds in Utah are already hunted to capacity. Additional hunting pressure could reduce deer populations below their present levels. To prevent this there would be a need to further restrict the deer harvest. This would decrease hunting opportunity. The increase in poeple would place greater demand on the UDWR to protect the deer and other wildlife species.

Upland game and waterfowl (Figures 2-18 and 2-19) would also be placed under heavier hunting pressure. If the IPP population were to follow established state-wide hunting trends, pheasants and upland game in the region would have to withstand only a 2 to 5 percent average increase in harvest over the life of the project in order to maintain the 1975 quality of hunting (Nish, 1975 and Hudson and Thayn, 1977). Declines in upland game populations are not expected.

Waterfowl would receive additional hunting pressure mainly at the Bicknell Bottoms Waterfowl Management Area in Wayne County and at Koosharem and Otter Creek reservoirs in Sevier and Piute counties. The influence of regional hunting pressure on migratory populations cannot be accurately predicted, but resident populations are small (Jensen, 1974) and would probably decline with increased hunting pressure.

Additional people living within the region would bring increased harassment to wildlife through recreational pursuits. Poaching would increase. Quantification is difficult, but there would be an adverse effect on wildlife. In 1974 about 3,000 wildlife citations involving loss of wildlife were issued in Utah. The actual number of animals lost to violators is unknown (UDWR, 1974),but studies in New Mexico have shown that for every deer legally harvested, there is one poached (Pursley, 1977). Increased harassment and poaching could have an adverse effect on the Henry Mountain bison herd. The UDWR indicates that this impact significant.

The endangered Utah prairie dog on the Awapa Plateau, the bald eagle, and the peregrine falcon would be more susceptible to shooting and loss by displacement with an increase in hunting and other outdoor recreational activities in the region. Such incidental losses are not expected to adversely modify the critical habitat of these species. The impact on the populations of prairie dogs and eagles would not be severe enough to jeopardize their continued existence. Only five active peregrine eyries are known to exist in Utah, thus unnecessary loss of even one peregrine could constitute jeopardy to the Utah population (John Gill, FWS).

b. Aquatic Wildlife

An increase in population would bring greater fishing pressure to the waters of the region. During the peak population year of construction (1987), these waters would have to supply an additional 87,400 fish in order for the IPP related fisherman to experience the 1973 quality of fishing in Utah (Hudson and Thayn, 1977 and Bangerter, 1973). An additional 31,000 fish per year would be needed to provide the 1973 quality of fishing for the projected long-term IPP population. Increased fishing pressure would be applied mainly to Lake Powell; Fish Lake; Johnson, Koosharem, Mill Meadow, Forsyth, and Otter Creek reservoirs; the middle and upper Fremont River; UM, Seven Mile, and Otter creeks; the East Fork of the Sevier River; and to numerous lakes and streams on the Aquarius Plateau, Boulder and Thousand Lake mountains. Utah fish hatcheries are presently producing at their capacity of 11 to 12 million fish per year (UDWR, 1979) and without supplemental planning rainbow, brook, lake, and cutthroat trout numbers could decline slightly. In addition, the average age and size of fish would decline. Brown trout are capable of maintaining adequate population levels under heavy fishing pressures (Shields, 1976). Fish numbers are already declining on the Boulder Mountain and any additional harvest could hasten this decline (May, 1977d). The number of fish in UM and Seven Mile creeks, which are non-stocked wild trout fisheries, would also decline. Lake Powell is capable of absorbing increased fishing pressure without a decline in fish populations.

The increased fishing pressure exerted on the Green River is expected to be slight. Some incidental losses of the endangered Colorado squawfish and humpback chub, the proposed endangered bonytail chub and the proposed threatened humpback sucker could occur as a result of increased fishing pressure. The increased population in the area, however, is not expected to jeopardize the continued existence of these species or adversely modify their critical habitats. The dewatering of the Fremont River would remove approximately 80 percent of the flow in the Dirty Devil River. This river is not an important fisheries but the endemic non-game fish and other aquatic species would suffer some adverse affects, from November to March, the extent of which is unknown.

2. Primary Project Area and Coal Haul Railroad

a. Terrestrial Wildlife

A total of about 5,710 acres of wildlife habitat would be disturbed within the primary project area of which about 5,220 acres would remain occupied for the life of the project. The loss of habitat would mainly affect small mammals, reptiles, and amphibians. (Appendix II-13 contains a check list of species.) The density and diversity of these animals reflects a typical desert habitat. Trapping data from Westinghouse Environmental Systems Department show that the occupied acreage would remove a small number of organisms when viewed in light of the total population. Water which may be impounded at the ash disposal site could be toxic to small animals and birds including waterfowl.

The proposed diversion works would occupy approximately 40 acres, or 20 percent, of riparian habitat currently utilized by quail, deer, and non-game species on the Fremont River between the proposed diversion works and Hanksville. The banks of the diversion pond would eventually revegetate and possibly add riparian habitat acreage. Twenty-nine miles of river bottom habitat from the proposed diversion works downstream to Hanksville could be adversely affected by the proposed removal of water. The number of miles of stream bed that would be totally dry between November and March is not known. Recharge from seeps and overflow from the diversion works would provide dispersed watering stations for wildlife along the river. During this same period, approximately 80 percent of the flow in the Dirty Devil River would be cut off. There would be little adverse impact on terrestrial species using the river. The number of acres of habitat and number of pheasant, quail, deer, and non-game animals that would be affected is not known.

Drawdown from the proposed ground water system could stop natural flow at up to 24 springs between the Waterpocket Fold and the Henry Mountains. This could destroy important habitat for wildlife. Loss of water could reduce the population of mule deer and chukar partridge along the Waterpocket Fold. Up to 147,200 acres of habitat serviced by the springs and seeps could be affected.

The proposed Diversion works and Red Desert Reservoir would provide 1,000 acres of new habitat and resting area for shore birds and waterfowl and would provide a reliable source of water for other game and non-game species in the area.

The proposed railroad would occupy 145 acres of potential black-footed ferret (endangered) habitat. The actual existence of this species in the affected area has not been confined. The continued existence of the species would not be jeoparized, nor would its critical habitat be modified.

If the agricultural lands near Caineville were converted to a residential area, the majority of the pheasant and quail habitat in the Caineville area (434 acres) would be occupied. At present about 25 pheasants are estimated in the area (Dalton, 1977).

3. Power Transmission Systems

a. Southern California Transmission System

(1) Terrestrial Wildlife

The proposed system would cross approximately 91 miles of critical deer winter range and 5 miles of critical elk winter range (Figures 2-B through 2-D). In this 91 miles, about 800 acres would be disturbed of which 51 would be occupied by access roads and transmission towers. The disturbed acreage is

less than 0.1 of 1 percent of the total critical winter range in the herd units crossed. About 103 miles of new access would be created in Utah along the Salt Wash to Jack Henry Junction segment of which about 10 would remain (Figure 2-B).

Deer and elk would be put under stress and some losses could result if construction were to take place during winter months (November through May) on their critical winter range. The new access, if not blocked, would make deer and elk more susceptible to hunting, poaching, and harassment in the future.

Of the potential bighorn sheep habitat in the Beaver Dam Mountains (Figure 2-D), approximately 38 acres would be disturbed of which 2 acres would be occupied by towers and access roads. In Nevada and California about 135 acres of Bighorn habitat would be disturbed and 6 acres would be permanently occupied (Figures 2-E, F, and H through K). This amounts to less than 0.1 percent of the total bighorn habitat in the mountains which would be crossed. Bighorn sheep are tolerant of power lines, but construction of transmission lines between February and May could result in disruption of lambing and loss of bighorn lambs. The magnitude of potential loss is not known but any losses would adversely affect bighorn populations.

Approximately 170 acres of sage grouse habitat would be disturbed in Forsyth Valley (Figure 2-B) and the Dog Valley area of Utah. This is about 0.7 percent of the total habitat in the two areas. If construction were to take place during the mating season (March-April) near strutting grounds, it could destroy grouse production for the year and possibly end future strutting activities on the established strutting grounds. An unknown number of grouse, as they fly to the strutting grounds, could collide with transmission towers. The number of collisions would decrease after the first year as the birds become accustomed to the towers. The towers would also provide perching sites for raptors which would make grouse more susceptable to predation. Loss of grouse would lower populations, but the magnitude of loss cannot be accurately assessed. An existing 345-kV power line in the Dog Valley area has not noticeably affected sage grouse populations. The ferruginous hawks nesting in pinyon-juniper areas, along the Jack Henry to Lincoln Junction segment could be disrupted between March and May. Losses in ferruginous hawk production would be low because ferruginous hawks nest on isolated nests rather than in dense eyries.

If bald eagles (endangered) were displaced from traditional winter roosts in Parowan and Cedar Valleys by construction activities, it could be considered as harrassement and could have an adverse affect on the displaced birds (Joseph, 1979 and Olendorf, 1979).

The disturbed and occupied acres of important habitat for the Utah prairie dog (endangered), desert tortoise (designated as rare in Nevada and under Federal Status Review, Federal Register 8-23-78), and Gila monster (unique), (Figures 2-B through 2-K) are given below in Table 3-6. The continued existence of any threatened or endangered species would not likely be jeopardized by the installation of the Southern California Transmission System. Adverse modification of critical Utah prairie dog habitat would not occur. Disturbance of ground from construction could provide new areas for Utah prairie dogs, as burrowing animals often prefer disturbed sites.

I. RECREATION AND AESTHETICS

1. Regional Setting

a. Recreation

The major recreation attractions within the regional setting (Table 2-10) would receive increased use by the new population. Some recreation sites may develop sanitation and garbage problems. The appeal of major attractions near to the power generating station (e.g., proposed Hondu Primitive Area and Capitol Reef National Park) may be reduced to some visitors. With additional population, off-road vehicle (ORV) use would increase.

If all developed recreation sites (camping and picnicking) were used equally, existing sites would be sufficient to serve the new population. However, use of developed sites would tend to follow past use patterns. Additional recreational pressures would most often occur at sites presently being used at greater than 20 percent of their design capacity, increasing use to 40 percent or more at many of the sites, which would result in overcrowding and deterioration of the environment and facilities. Overcrowding and deterioration would be intensified at sites presently being used at greater than 40 percent capacity (see Table 2-12).

The increase in permanent population would result in an estimated additional 1,430 fishermen in the region (Hudson and Thayn, 1976). There would be an estimated increased demand for 31,000 fish annually, and increased stocking would be needed to maintain present fisherman success. An estimated additional 605 hunters would be afield annually to harvest deer and elk. An additional estimated 270 hunters would be afield in pursuit of upland game (Hudson and Thayn, 1976). Table 3-7 lists the anticipated impacts to hunting and fishing on an annual basis. The additional competition for available fish and game would most likely lead to less hunter and fisherman success, and would result in dissatisfaction with the recreation experience.

Recreational facilities in towns in the region would become overcrowded. Additional municipal facilities including 7 to 13 acres of city parks, swimming pools, tennis courts, and a 9-hole golf course would be needed to meet minimum standards (BOR, 1967).

b. Aesthetics

Upper portions of the two 750 foot high stacks, their aircraft warning lights, and any visible emissions from the stacks could be seen from distances varying from 8 to 20 miles including portions of Highway U-24, Fishlake National Forest, Capitol Reef National Park, and the proposed Hondu Primitive Area on the San Rafael Swell. The power plant would be considered a landmark of interest to some and an aesthetically degrading intrusion to others. Man-made contrast of the stacks would be low, but water vapor emissions from the stacks could at times produce high contrast. The buildings would be screened by surrounding buttes.

Atmospheric discoloration and reduction in visual range would degrade scenic value of high quality scenic areas in the regional setting. Visual range in Capitol Reef and Canyonlands National Parks could be reduced from 87 miles to between 80 and 84 miles for 7 to 11 days per year. For the balance of the year, visual range would be reduced less than 3 miles in Capitol Reef and less than 4 miles in Canyonlands.

2. Primary Project Area and Coal Haul Railroad

a. Recreation

The plant site, Red Desert Reservoir, Fremont River Diversion, well field, railroad, borrow areas and associated development would remove about 5,220 acres of land currently available for ORV use.

When not severely drawn down, the Red Desert Reservoir could provide an area for water related recreation pursuits. Without management, recreational use of the area could cause litter and sanitation problems.

b. Aesthetics

When not drawn down, the Red Desert Reservoir could be a visually pleasing variation in the landscape as seen from Highway U-24.

The coal haul railroad would be visible (medium contrast) from the Muddy Creek WSA (proposed Hondu Primitive Area) and would create high man-made contrast in the Middle Desert Wash. The railroad crossing of Interstate Highway 70 (I-70), a scenic tourist route, would be highly visible (high contrast) to passengers in approximately 1,300 vehicles daily (see Figure 2-A). One of the proposed railroad borrow areas would be visible (medium contrast) from I-70.

3. Power Transmission Systems

a. Recreation

The presence of the transmission lines could cause a reduction in quality of the recreation experience for some people visiting the 25 recreation attractions adjacent to the proposed transmission systems (Figure 2-23).

b. Aesthetics

The transmission lines would cause man-made contrast in or near visually sensitive areas such as major travel routes, primary highway crossings, high quality scenic areas, communities, or in areas with recreational values. Where proposed transmission lines would parallel existing lines, additional contrast would generally not add appreciably to present contrast, but would make disturbance more obvious. Where metal towers are combined with existing or proposed wood towers, visual contrast would be obvious. This would occur on the plant site to Jack Henry Junction, Jack Henry Junction to Lincoln Junction, and Jack Henry to St. George segments.

The transmission system would cross major highways in 36 locations. Table 3-8 shows numbers of vehicles that would pass by the transmission lines daily and the anticipated contrast rating at each crossing.

In Utah, the Jack Henry Junction to Cedar Wash segment would parallel I-15 (mileposts 1-85, Figure 2-H) and would be visible (medium to high contrast) to travelers in 4,515 to 7,800 vehicles daily. Between the plant and Cedar Wash, transmission lines would also be visible (medium to high contrast) to residents of Fremont, Kingston, Enoch, Cedar City, Harrisburg, St. George, and Santa Clara. In Nevada, the Cedar Wash to Gypsum Junction segment would parallel I-15 (mileposts 45-75, Figure 2-H) and would be visible (medium to high contrast) to travelers in 6,645 vehicles daily. In Nevada, the Lincoln Substation to Gypsum Junction segment would parallel U.S. 93 (mileposts 70 to 115) and would be visible (high contrast) to travelers in 655 to 700 vehicles

daily. It would also create a "tunnel effect" for 45 miles in combination with the existing transmission line on the opposite side of U.S. 93. In Nevada, the Gypsum Junction to Eldorado Junction segment would be visible (low contrast) from residential areas of Henderson. In California, the southern line would be visible (medium contrast) from housing developments in the Apple Valley area.

The lines would be visible from within portions of 25 recreation attractions or areas of high scenic quality as follows:

Recreation Attraction	Anticipated Contrast
Hondu Primitive Area	Low
Otter Creek Reservoir	Low
Red Mountain	Low
Cathedral Gorge State Park	Low
Cima Dome	Low
Devils Playground	Low
Pisgah Crater	Low
Lake Mead National Recreation Area	Low
Virgin River Recreation Land	Low
Joshua Tree Natural Area	Medium
Pahranagat National Wildlife Refuge	Medium
Desert National Wildlife Refuge	Medium
Highland Mountains	Medium
Sunrise Mountain	Medium
Muddy Mountains	Medium
Fremont River Complex	High
Thousand Lake Mountain	High
Pine Valley Mountain Foothills	High
Cave Lake State Park	High
Commins Lake	High
Ward Charcoal Ovens State Park	High
Echo Canyon State Recreation Area	High
Panaca Charcoal Kilns	High
Sidewinder	High
Mahogany Mountain	High

Recreational values would be reduced for some visitors.

The lines would be visible from portions of 38 areas with potential for wilderness designation (Table 2-15 and Figure 2-26). The increase in man-made contrast would be low from all areas except WSA NV-040-172 (Far South Egans), WSA NV-040-169 (Mt. Grafton), WSA NV-040-172 (South Egan Range), WSA NV-050-IPP-07 (Delamar Mountain) and the uninventoried BLM roadless unit, where the increase in contrast would be high when viewed from portions of the areas, and WSA NV-050-IPP-07 (Arrow Canyon), WSA NV-050-IPP-15 (Muddy Mountain), WSA UT-040-046 and RARE II 4259 (Pine Valley Mountain) where the increase in contrast would be medium when viewed from portions of the areas.

4. Microwave Sites

The Elkhorn Station and power line would be visibile (high contrast) when viewed from an adjacent visitor access road, and would reduce the aesthetic

values of the area to some visitors. The Moroni Station would be visible (high to low contrast) from portions of the proposed Hondu Primitive Area, and would reduce the aesthetic qualities of the area to some visitors.

J. LAND USE

1. Regional Setting

Since Caineville is within 10 miles of the proposed generating complex, employees moving into the area would likely purchase property there. All of the 434 acres of irrigated land could be subdivided into small non-agricultural developments. This represents 37 percent of the irrigated land east of Capitol Reef National Park in Wayne County, Utah (Bureau of Economic and Business Research, 1976).

Thirty-three areas with potential for wilderness or other special designation (as listed on Table 2-14 and shown on Figure 2-25) may receive additional ORV and other visitor use, resulting in degradation of wilderness or other values. Loss of water flow in the Dirty Devil River due to diversion and storage of Fremont River water could reduce or eliminate the potential of the Dirty Devil River for Wild and Scenic River designation (ref. BLM Planning Management Framework Plan).

The 1975 average daily traffic (ADT) of 320 vehicles per day on Utah Highway 24 just each of Capitol Reef National Park could more than double during the peak construction period for the proposed project. Traffic through the park during the operational period for the power plant could be about one-third the increase experienced during the construction phase.

Truck traffic on Highway U-24 through Capitol Reef National Park would increase to provide goods and services to the project site and to the new residents. The increase in traffic through the park would likely increase both the total number of accidents and also the accident rate.

2. Primary Project Area and Coal Haul Railroad

The 4,640-acre plant site and 1,080 acres within the favored town site would change from federal to private ownership. The proposed sale of 4,640 acres of public land for the plant site would reduce federal ownership in Wayne County east of Capitol Reef National Park by about 0.54 percent. For the duration of the project, the only environmental impact tied directly to sale of the land (as opposed to granting a right-of-way) would relate to the increase in the local property tax base. The tax base in Wayne County would be slightly greater than if IPP were granted a right-of-way for the plant. According to the applicant, the principle reason for requesting purchase is to obtain financial security for borrowing funds to construct the project (personal communication, Campbell, 1978).

With a sale, the federal government would relinquish control of land uses which could occur in the long-term should the plant be abandoned or removed; however, local county zoning would apply.

With respect to the sale criteria stated in FLPMA, the proposed 4,640 acres that would be sold are:

1. Not difficult or uneconomic to manage, and are not suitable for management by another federal agency, or

2. Not (previously) acquired for a specific purpose, or

3. Of potential value for serving important public objectives, including but not limited to expansion of communities and economic development. The environmental impact analysis in this statment does not determine whether or not such objectives can better be served on other than public land or by maintaining the plant site in federal ownership.

The sale of the 1,080 acres of public land for the new town site would reduce federal ownership in Wayne County east of Capitol Reef National Park by about 0.06 percent. The town site would also meet the FLPMA Criteria.

Though other federal lands would not change ownership, rights-of-way would be issued which transfer certain privileges to the grantee. Privileges granted would vary from virtually complete within the fenced portion of the plant site, to loss of surface resources on those areas occupied by structures, to very minor along unfenced undisturbed portions of linear facilities. In any case, the Federal Government would be limited in issuance of additional rights-of-way on those areas committed to IPP.

Should the project be completed there would be a loss of land uses on federal land as follows:

Recreation: Commitment of land to private ownership, permits, and rights-of-way: 13,980 acres; 4,220 acres occupied (terrestrial use)--This represents a loss of approximately 1 percent of the recreation lands in the primary project area. Should the Red Desert Reservoir be constructed, approximately 1,000 acres of new water surface would be available for water based recreation.

Grazing: 5,220 acres occupied by facilities--assuming an average stocking rate in the primary project area of 36 acres per AUM there would a loss of 145 AUMs forage within allotments affecting 43 stockmen. This would reduce estimated available forage less than 0.5 percent in the project area.

About 147,200 acres are served by springs, seeps, and wells. Should the 23 springs and seeps and four wells be dried up, approximately 4,089 AUMs would be lost. This would reduce grazeable forage about 17 percent in nine allotments. Impacts from loss of water could extend 50 years beyond termination of ground water pumping.

Mining: 1,080 acres--Thirty-three mining claims have been located on the new town site. Should valuable minerals be found, mining could be eliminated.

Approximately 11 miles of railroad would be built across private agricultural lands. This would change 133 acres of agricultural land to industrial uses in Emery County. Emery County has 38,604 acres of agricultural land (Bureau of Economics and Business Research, 1976). The railroad would occupy about 0.5 percent of the irrigated lands in the county.

3. Power Transmission Systems

Should IPP be issued rights-of-way as proposed, the government would be limited in authorizing additional uses on the 24,613 acres of right-of-way that would be committed to IPP for the proposed transmission lines.

Since no active mining or drilling operations have been identified within the proposed power transmission system routes, the probability of land use conflicts between commercial mineral extraction and construction and operation of IPP's power transmission systems is low. Normally introduction of power-lines and a source of power near mineral resource areas is beneficial to development (Bureau of Mines, 1978).

The construction of power transmission lines would impair wilderness character (i.e., naturalness) and designation suitability adjacent to the proposed power transmission system in the following areas (see Figure 2-26 and 2-B to 2-M): BLM Wilderness Study Areas, 1) NV-040-172, Far South Egan (approximately 1/2 mile within area for 3 miles) 2) NV-040-169, Mt. Grafton (approximately 1/4 to 1/2 mile within area for 20 miles), 3) NV-050-IPP-07, Delamar Mountain (approximately 200 feet within area for 14 miles), 4) NV-050-IPP-15, Muddy Mountain (approximately 339 feet into the unit for 4 miles) and 5) WSA UT-040-057-AZ-010-004 (approximately 330 feet within WSA for 10 miles. The construction of power transmission lines would impair any wilderness character (i.e., naturalness) and designation suitability adjacent to the lines in one roadless unit, NV-040-169.

Any impairment of wilderness suitability would not be allowed prior to completion of BLM's wilderness review and congressional decision on areas having wilderness character. Wilderness suitability would not be affected in any other area with wilderness potential that has been identified along the proposed power transmission system.

4. Microwave System

Should the proposed Moroni Station be built, primitive values within a portion of the proposed Hondu Primitive Area would be lost.

K. LAND USE PLANS AND CONTROLS

1. Coordination With Existing Land Use Plans

Planning for federal land use has been done by both the Forest Service and the Bureau of Land Management for lands which would be affected by the generating facilities and the transmission lines. This planning has been done over about a 20-year period and is continuing. Some plans are newly revised and include consideration of the IPP proposal. The majority of plans, however, were prepared prior to the proposal and did not consider it. Both Forest Service and BLM planning systems allow for consideration of new proposals.

The proposed plant site and transmission corridors were compared with the existing planning documents and all significant conflicts have been covered in appropriate sections of this statement. Power transmission line conflicts are highlighted in Table 3-9.

Alternatives are presented in this environmental statement which would avoid conflicts for some planning units. Other plans would require revision in order for the conflicts to be resolved. Any revisions would be made following agency regulations, procedures, and policies. For BLM (inasmuch as new

The second scenario also assumes that all workers would live in Wayne County, but allows a more reasonable level of residentiary employment. The assumption is that new firms would be established in the county during the construction period and that regional trading relationships would be altered. In general, the more the local economy could supply its residents and businesses with goods and services, the larger would be the population which would result from the addition to basic employment. This case would be consistent with the development of a new town, but could also occur without a new town. A peak 1987 population of 10,800 for Wayne County would result. The IPP related population increases with Scenerio II is given in Table 3-10. Table 3-11 shows the population distribution in the county if a new town were built and Table 3-12 shows the distribution without a new town (UPC, 1978).

The third scenario assumes that about 40 percent or 1,000 of the temporary construction workers would commute to the work site from outside the county. The same level of residentiary employment as in the second scenerio is assumed. This combination of assumptions yielded the lowest 1987 peak population prediction, 7,004 (UPC, 1978).

Because Scenario II most accurately reflects both the preference of county officials (new town) and a "worst case" (greatest population increase), it is used as the basis for the analysis of impacts to human resources (UPC, 1978).

b. Employment

Table 3-13 outlines the basic and residentiary jobs that would result during peak construction (1987) for each employment sector whether or not a new town were built (UPC, 1978).

The total number of jobs and the percentage of the total number by sector, for the years 1982, 1987, and 1990, are shown in Table 3-14. The percentage allocation by sector reveals the relative shifts in the importance of the sectors that would occur with construction of IPP. By 1990, for example, the Wayne County economy would shift somewhat from its dependence upon government, trade, services, and agriculture and would depend more on construction and transportation, communication, and utilities. The county's economic base would be improved by the corresponding increase in employment opportunities (UPC, 1978).

Increased employment opportunities would enable the local economy to supply greater amounts of labor. The present ability of the County to supply labor to the labor market is limited by the small numbers of persons residing within commuting distance of the project. A large-scale in-migration would, therefore, be required. Labor market changes would include a decrease in proprietorships, particularly in the agricultural sector. A decrease in unemployment, part-time and dual job holding would also result. The rate at which area residents participate in the labor force would increase (UPC, 1978).

These job opportunities would also bring about in-migration of job seekers from outside the area, especially during IPP construction. This "boomtown" reputation may continue to attract in-migration after the available jobs have been filled and/or after the peak of construction when employment opportunities begin to decline. In either case, the labor force could continue to expand in the absence of sufficient numbers of jobs, causing the unemployment rate to return to or exceed its pre-project level. Out-migration would probably follow the decline in employment opportunities.

the plant operation and maintenance workforce. The average wage for this sector is not as high as in the construction sector (UPC, 1978).

d. Infrastructures

IPP endorses construction of a new town, with primary planning and development responsibility being that of local elected officials. During the early years of the project, prepayment of sales and use taxes by IPP would be insufficient to support the new community endeavor (UPC, 1978). It is assumed by IPP and local officials that over time the project would create a Wayne County bonding capacity of sufficient size to finance the debt required to construct necessary public facilities, including water, sewer, etc. However, even prepayment of sales and use taxes by IPP would be insufficient to support the new community endeavor during the early years of the project (UCP, 1978).

New town construction, if properly planned and timely constructed would provide housing and services required by the construction work force. The success of the new town in this regard would be dependent upon adequate planning and zoning, to concentrate community-level impacts there while preventing the random dispersion--and associated high public costs--of mobile home or similar dwelling units (UPC, 1978).

The project construction phase, being relatively short and very disruptive, creates its own service demands, which are greater than those of the operation and maintenance phase, with its characteristics of stability and permanence. Capital projects for service delivery cannot be built to meet demands associated with the construction peak; doing so would leave much excess capacity and a long-term population saddled with excessive debt. A further consideration in planning capital projects is that communities may wish to upgrade present facilities as well as to construct new ones. Throughout, attention should be paid to the recipients of services, to attempt to ensure fair and equitable distribution of capital project benefits and costs (UPC, 1978).

To meet service demands at a time when revenues received as a result of the growth may be inadequate to the task, the public sector response often takes the form of across-the-board increases in service rates, user fees, and taxes, or of decreases in the quality and quantity of services offered, or both. This situation would improve as revenues from the project increase relative to public service costs (UPC, 1978).

Because the construction work force would be much larger than the permanent one, determination of the proper size of facilities and the staff required for service delivery is a complex problem requiring new and perhaps untried approaches to financing.

Use of temporary quarters would be unavoidable during the construction period. Lack of facilities would also force more intensive use of existing facilities (for example, sending children to school in shifts), greater use of mobile facilities, and, overall, reduced service levels. Local residents and government representatives should expect rising service costs because of the difficulty involved in meeting intense short term demands coupled with lack of experience in dealing with such problems, and inadequacy of physical facilities (UPC, 1978).

It has been assumed that about 85 percent of the project-induced population would reside in the new town and 15 percent would live in existing communities or in the County's unincorporated area.

1987 peak could be met by using temporary facilities (or by sending students to school in shifts). For the elementary facilities, this would mean permanent additional space for 390 students and temporary space for 711 more. For secondary students, additional permanent space for 210 students would be needed and temporary space for 391 (UPC, 1978).

Assuming student-teacher ratios of 27 to 1 for elementary schools and 24 to 1 for secondary, the total teachers required by the Wayne County population in 1982 would be 21; in 1987, 91; and in 1990, 47. Current costs and space requirements average $53.00 per square foot for 76 square feet per student. Providing facilities for the temporary student would be the immediate problem. With proper planning, the required permanent facilities could be constructed. Facilities for the temporary students could be provided through use of existing non-school buildings in the community, use of school buildings in shifts, or purchase of portable 25-student units which are available for about $20,000.00 each. The cost for portable units would be $800.00 per student while permanent facilities would cost $4,028.00 per student (UPC, 1978).

(3) Housing

Since the permanent work force would be much smaller than the construction work force, new construction of single family homes would not be expected to exceed projected long run demands of the community when the project's operation and maintenance phase has been reached. The difference between the demand for single family homes at the population peak and the operation and maintenance phase would be met by mobile homes or group quarters for single workers. Because workers would live where housing is available, careful planning and zoning should direct mobile home parks to areas easily served by government (to reduce costs). Such places should be designed with a view toward ready transition to the situation when the operations phase has been reached (UPC, 1978).

At projected population levels, the demand for dwelling units is shown in Table 3-16.

TABLE 3-16

Wayne County Housing Requirements With IPP
In 1982, 1987, 1990

	1982	1987	1990
Total population[a]	2,700	10,800	5,000
Required Dwelling Units	816	3,186	1,521
Average Household Size	3.31	3.39	3.28

Source: UPED-SAFE Model Projections, Bureau of Economic and Business Research, University of Utah.

[a]Population as projected under Scenario II.

With a new town, assuming an average household size of 3.4 in 1987, 41 more housing units would be required in Bicknell in 1987 than in 1990, 54 in Loa, and 16 in Torrey (UPC, 1978).

M. HUMAN HEALTH AND SAFETY

Generating Complex and Coal Haul Railroad

Based on construction accident rates (UIC, 1979) and the average number of employees, the following numbers and types of accidents could be expected during the peak of construction (1987).

453 accidents
149 lost work-day accidents
0.73 fatalities

During the operating phase of the project, the following accidents could be expected each year according to applicable rates (UIC, 1979).

31 accidents
8 lost work-day accidents
0.128 fatalities.

Preliminary 1979 figures indicate 0.06 fatal and 10.91 near-fatal (work days lost) accidents per 200,000 employee hours in underground mines and associated facilities. Based on these rates, 1.2 fatal and 218.2 non-fatal accidents could be expected each year from IPP related coal production (DOL, 1979).

Potential for traffic accidents would also increase. During the peak population year, 324 auto accidents and 3 traffic deaths could be expected. During the operation of the plant, 150 accidents and 1 fatality annually could be expected (UDOT, 1979). Operation of the trains would increase the ambient noise levels in the vicinity of the tracks. Predicted noise levels from operation of a diesel freight train operating between 30 and 50 mph are presented in Table 3-18, and probably represent the peak noise levels associated with the coal railroad.

Potential collisions with animals, vehicles, and heavy equipment accidents would be safety hazards associated with the railroad.

Power Transmission Systems

Potential health and safety hazards during construction of the power transmission systems would result mainly from the use of vehicles and equipment. Based on a peak year average of 984 employees and applying the construction accident rates (UIC, 1979), the following could be expected: 183 accidents; 60 "lost-work day" accidents; and 0.3 fatalities.

6. The natural wild trout fishery on UM Creek (milepost 34, Salt Wash to Jack Henry) would be protected by closing off all new access and by leaving a 25-foot vegetation buffer between the nearest tower pad and stream. Stream crossing points would be temporarily bridged to prevent siltation of UM Creek.

7. Use helicopters or hand methods to construct pads, as designated by the appropriate federal official to erect towers and string conductors in areas where access across the terrain or management constraints preclude standard construction methods.

8. The applicant would prepare photographic simulations of areas in which facilities are proposed within foreground-middleground areas of high scenic quality or high sensitivity as designated by the appropriate federal or state official. Using the simulation as a guide, the applicant would design and locate structures to blend into the existing environment. Affected governmental agencies would evaluate and approve measures prior to construction.

9. Where designated by the appropriate federal official, steel structures on the Utah transmission system would be used, instead of wooden structures, to reduce the visual contrast. Steel structures would be needed between the plant site and Jack Henry Junction, Jack Henry Junction and the Lincoln substation, and Jack Henry Junction to St. George Substation near highways and special scenic areas.

10. The power line to the Elkhorn microwave site would be buried next to the existing access road.

11. Transmission lines would be maintained and repaired using the same techniques as were used in original construction.

C. MEASURES REQUIRED OF THE APPLICANT BY STATE AND LOCAL ENTITIES

1. The same mitigating measures could be required on state and local government lands as on federal land. Authority is granted to the State of Utah under the Utah Code Annotated (UCA) 1953, 65-2-1 and authority is granted in California under the California Environmental Quality Act.

2. The applicant would be required to replace all water lost from springs, wells, seeps, creeks, and streams which have been appropriated to federal agencies or other users. Authority is granted to the State of Utah under the UCA 1953, 65-2-1.

D. EVALUATION OF MITIGATING MEASURES

By prohibiting blasting within 500 feet of springs, alteration of ground water regimes would be avoided. By replacing all water flows, there would be no impacts to the water supply for livestock or wildlife numbers on 147,200 acres which are watered by the 24 springs and seeps, and four wells that could

TOPOGRAPHY, GEOLOGY, MINERAL RESOURCES, AND PALEONTOLOGY

Surface geology and topography within the primary project area would be modified by taking approximately 7.6 million cubic yards of borrow material from identified borrow sites (see Figure 1-6).

The proposed town construction may make future recovery of coal or other minerals difficult. It is not expected that the coal could be economically recovered even without the proposed project (Doelling, 1972). The amount and quality of other minerals is undetermined.

Impacts from additional people in the regional setting would result in partial destruction or total loss of paleontological information. This information has value for scientific and educational purposes. The amount of loss and significance cannot be accurately predicted. Subsurface paleontological values not initially discovered through field inventories, could be encountered during construction. Even if salvage of subsurface paleontological values is performed, an unknown amount of scientific evidence would be lost due to limited salvage techniques. Increased access along transmission lines could lead to increased rockhounding and a loss of information.

SOILS

As a result of increased population in the regional setting, an unquantifiable increase in ORV activity would occur northeast of Hanksville on soils susceptible to wind erosion. The ORV activity would disturb these soils and make them more subject to wind erosion for approximately 20 years after being disturbed.

Construction activities within the primary project area would remove vegetation, compact soils, and cause localized increased erosion on approximately 5,710 areas.

Erosion along the proposed power transmission line routes would increase as soil stabilizing vegetation would be removed or crushed and soils would be compacted by construction equipment. The potential for increased erosion would be greatest along approximately 500 miles of moderate to high or severe erosion hazard areas that would be affected by the transmission line systems (Figures 2-B to 2-M). Increased erosion would be localized on the disturbed areas and no impacts on other resources would be expected.

The disturbed areas in the cold desert and mountain areas of Utah and Nevada would likely revegetate and stabilize within 10 to 20 years and the hot desert of Utah, Nevada, and California would likely stabilize within 30 years (Vasek, et al., 1975).

One area of major concern would be between milepost 22 and 26 of the Salt Wash to Jack Henry Junction segment of the Southern California and Utah transmission systems (see Figure 2-B). Along this segment new access road would be required. Soils in the area are unstable and slumping would occur along the access roads and tower pads.

WATER RESOURCES

IPP would use 30,000 acre-feet of water from the Fremont River which represents about 2 percent of Utah's share of Colorado River water (Olds, 1979). Other uses of the water would be precluded for the life of the project. Withdrawal would increase the salinity of the Colorado River at Lee's Ferry by, at most, 0.6 milligrams per liter. This would be an increase of less than 1/10 on 1 percent. From November through March the Fremont River's flow would be zero below the diversion dam, and 80 percent of the Dirty Devil River's flow would also be eliminated.

Caine Springs and three seeps would be expected to cease their flow, however, 20 other springs and seeps could cease natural flow. In excess of 50 years beyond the life of the project would be required before groundwater in the area would return to present equilibrium. Degradation would occur in ground water quality in the vicinity of wells.

VEGETATION

About 5,710 acres of cold desert vegetation are expected to be disturbed and about 5,220 acres would remain occupied by project components within the primary project area.

Approximately 40 acres of riparian vegetation would be inundated by the diversion works. Diversion of the Fremont River would inhibit growth of phreatophytes downstream from the point of the diversion. The amount of impact on this riparian vegetation (approximately 200 acres) cannot be accurately predicted, but is expected to be slight. Pumping of water from the Navajo Formation could stop natural flow at as many as 24 springs and seeps which would result in the loss of riparian vegetation.

A possibly endangered plant, Sclerocactus wrightiae, could be reduced in numbers in the vicinity of the plant site. Essential habitat for possibly threatened and endangered flora within the influence zone could be damaged by increased recreational use (e.g., ORV). Some plants could be destroyed and some species (such as cactus) might be taken by collectors. It is not expected that any species would become extinct.

The unusual endemic composite (Sunflower family), Parthenium alpinum, in the vicinity of the railroad route could be reduced in number.

The Southern California Transmission System would cross approximately 79 miles of Joshua tree forests in the hot desert vegetation type as shown on Figure 2-B through 2-M. Approximately 320 acres of Joshua tree forest would be disturbed of which 14 would remain occupied.

Construction of the line could impact any candidate or proposed threatened or endangered plant which occurs along the routes. Any construction activity which requires modification of the soils surface will have some affect upon vegetation. The extent of the affects are for the most part unknown, but are expected to be transitory and not permanent. Individual plants of threatened or endangered species could be inadvertantly destroyed. Although there are many California plants on candidate and proposed lists of threatened and endangered flora, none are likely to occur directly in the proposed corridor (Johnson, 1977).

ANIMAL LIFE

Terrestrial Wildlife

The additional people which the proposed project would bring to Wayne County, Utah would increase the hunting pressure on and harassment of the region's game and non-game species and could reduce animal life populations. The degree of decline cannot be accurately predicted.

The endangered Utah prairie dog on the Awapa Plateau, the bald eagle, and the pregrine falcon would be more susceptible to shooting and loss by displacement with an increase in hunting and other outdoor recreational activities in the region. Such incidental losses are not expected to adversely modify the critical habitat of these species. The impact on the populations of prairie dogs and eagles would not be severe enough to jeopardize their continued existence. However, because only five active peregrine eyries are known to

exist in Utah (John Gill, FWS), loss of even one peregrine could constitute jeopardy to the Utah peregrine population.

A total of about 5,710 acres of wildlife habitat would be disturbed within the primary project area of which about 5,220 acres would remain occupied for the life of the project. The loss of habitat would mainly affect small mammals, reptiles, and amphibians.

The proposed diversion works would occupy approximately 40 acres of riparian habitat currently utilized by quail, deer, and non-game species. This is about 20 percent of the riparian habitat on the Fremont River between the proposed diversion works and Hanksville. Twenty-nine miles of river bottom habitat from the proposed diversion works downstream to Hanksville could be adversely affected by the proposed removal of water. The number of miles of stream bed that would be totally dry between November and March is not known. Recharge from seeps and overflow from the diversion works would provide dispersed watering stations for wildlife along the river. The number of acres of habitat and number of pheasant, quail, deer, and non-game animals that would be affected is not known.

The proposed railroad would occupy 145 acres of potential black-footed ferret (endangered) habitat. The actual existence of this species in the affected area has not been confirmed. The continued existence of the species would not be jeopardized nor would its critical habitat be modified.

If the agricultural lands near Caineville were converted to a residential area, the majority of the pheasant and quail habitat in the Caineville area (434 acres) would be occupied. At present about 25 pheasants are estimated in the area (Dalton, 1977).

Drawdown from the proposed ground water system could stop natural flow at springs and seeps between the Waterpocket Fold and the Henry Mountains. This could destroy important habitat for wildlife. Even though IPP would be required to replace water at the springs for the life of the project, water sources for wildlife could be lost for over 50 years after cessation of pumping. Between 25,000 and 147,200 acres of habitat serviced by the springs and seeps could be affected.

Overall the proposed power transmission systems would disturb about 6,170 acres of wildlife habitat of which 420 would remain occupied for the life of the project. Some animals would be killed by machinery or forced into new habitation where they would be more susceptible to predation or less successful in competing for basic biological requirements.

Towers along 47 miles of powerline that would be in sage grouse concentration areas would provide perching sites for raptors with grouse more susceptible to predation and populations could decline. Reduction in grouse populations would lower hunting success, but the magnitude of loss cannot be predicted.

Isolated ferruginous hawk nesting sites could be located in pinyon-juniper foothills along the proposed Jack Henry to Lincoln Junction and Lincoln to Gonder Segments. If construction activities occurred during the nesting season, March through May, nest abandonment and decrease in hawk production would likely occur for one year. Losses in ferruginous hawk production would be small because ferruginous hawks nest on isolated nests rather than in dense eyries.

Aquatic Wildlife

An increase in population would bring greater fishing pressure to the waters of the region. During the peak population year of construction (1987),

ming pools, tennis courts, and a 9-hole golf course would be needed to meet minimum standards (BOR, 1967).

The plant and its visible emissions would be obvious to travelers on some segments of Highway U-24 and to viewers from areas of Class A scenery on the Fishlake National Forest, Capitol Reef National Park, and the proposed Hondu Primitive Area. The power plant would be considered a landmark of interest to some and an aesthetically degrading intrusion to others. The coal haul railroad would be a visual intrusion on the proposed Hondu Primitive Area and the Interstate Highway 70 (I-70) corridor. Along I-70 the resulting high contrast would be visible to the passengers in 1,300 vehicles daily.

Atmospheric discoloration and reduction of visual range would degrade scenic value of high quality scenic areas in the regional setting.

The transmission system would make 36 major highway crossings and would parallel major highways (I-15 and U.S. 93) for 160 miles in Utah and Nevada. IPP transmission lines would be visible (medium to high contrast) to travelers in 15,145 vehicles daily. The line would parallel U.S. 93 for 45 miles and would create a "tunnel effect" in combination with the existing transmission line on the opposite side of U.S. 93. In Utah, the line would be visible (medium to high contrast) from seven communities. In Nevada, the line would be visible (low contrast) from Henderson. In California, the lines would be visible (medium contrast) to residents of the Apple Valley area.

The lines would be visible from portions of 25 recreation attractions or areas of high scenic quality. There would be a low increase in man-made contrast as viewed from 8 areas, medium increase as viewed from 7 areas and high increase as viewed from 10 areas. The lines would be visible (low to high contrast) from portions of 38 areas with potential for wilderness designation.

The presence of the Moroni microwave station would reduce high aesthetic values in the surrounding areas.

LAND USE

Up to 434 acres (37 percent) of the irrigated land east of Capitol Reef National Park in Wayne County could be subdivided into small non-agricultural developments. An additional 133 acres (less than 0.05 percent) of agricultural land in Emery County would be occupied by the proposed railroad. No adverse impacts on mining or other mineral resource extraction operations have been identified.

In the regional setting, 33 areas with potential for wilderness or other special designation (listed in Table 2-14 and identified in Figure 2-25) may receive additional ORV and other visitor use, resulting in degradation of values for which they are being protected. The loss of water flow could reduce or eliminate the potential of the Dirty Devil River for Wild and Scenic River designation (ref. BLM Planning, Management Framework Plan).

Should the proposed Moroni microwave station be built, primitive values within a portion of the proposed Hondu Primitive Area would be lost.

LAND USE PLANS AND CONTROLS

The I-70 railroad crossing would conflict with visual resource management objectives recommended in the BLM San Rafael Resource Area MFP.

Proposed power line activities would be in conflict with current BLM management objectives in nine areas identified in Table 3-11.

2. Depending on plans for, and success of, future project removal, the option of using the land surface occupied by project features would be impaired for other land uses for the long-term future. This would involve up to 4,607 acres of land, of which 7,370 would be in Wayne County, Utah.

Cumulative long-term effects of coal development for numerous uses, including IPP, are discussed in a separate environmental statement, Environmental Statement: Coal Development in Central Utah. That statement projects the mining of a total of 383,000,000 tons of coal, leaving another 383,000,000 tons of unrecoverable coal in the mines, and disturbance of up to 2,400 acres of land for mining and associated activities. Other long-term cumulative impacts identified are subsidence and subsequent changes in water flows; loss of wildlife and wildlife habitat; damage to archaeological and paleontological values; and the effects of more people living in Central Utah (USGS, 1979).

The power plant operation at Salt Wash would use an estimated 30,000 acre-feet of water per year from the Fremont River and 20,000 acre-feet per year from the Navajo Sandstone aquifer.

During the short-term and beyond (in part), this water could not be used for other purposes, such as municipal, other industrial, agricultural, fish, and wildlife uses.

The proposed water use by IPP would continue for the lifetime of the plant operation. It is anticipated also that some of this water would continue to be used after discontinuance of power production since part of the population likely would remain in the new town, and the proposed Red Desert Reservoir likely would remain. In the long-term, a portion of the water could be devoted to such uses as noted in the preceding paragraph, subject to agreements and approvals from water regulatory officials.

In the long-term, flow in the Fremont river below the diversion during November through March could be restored after the power plant ceases operation. More than 50 years could pass after IPP operation ceased, however, before the Navajo Sandstone aquifer would be recharged. Springs and seeps could be affected during the recharge period.

Cultural and paleontological resources tend to gain value over time. Should the proposed action be implemented, the short-term accumulation and dissemination of data gathered from survey and salvage during site disturbance would provide an immediate short-term gain to the scientific knowledge of the region. Conversely, future advances in technology may mean that preservation of the area for future observations would produce a greater amount of information in the long-term. Uncontrolled loss of such values could also occur from an increased population and associated recreational activities which

The release of small amounts of radioactive compounds to the atmosphere from coal combustion would cause only a small increase in radiation exposure of the general population. The accumulation of these compounds in the soil would be but a small addition to the existing radioactivity levels.

Some general concern has been expressed in recent years that electric fields and induced magnetic fields in the vicinity of high voltage transmission lines are physically dangerous and can have adverse physiological effects (Univ. of Okla., 1975). Long-term effects from IPP's transmission systems are unknown. The proposed IPP transmission lines would span open country, however, where people would not spend long periods of time in their proximity.

Vegetation on 6,240 acres would be temporarily disturbed by construction, but would be replaced by natural succession or artificial means to varied extent during the short term. The project would occupy about 5,650 acres which would not be revegetated during the life of the project. After eventual removal of the project, about 1,500 acres would revegetate naturally, but approximately 20 years would pass before revegetation is complete. Riparian vegetation connected with proposed water drawdown could be lost for as long as 50 years after project abandonment. Vegetation produced at the new town--lawns, trees, and shrubery--could be more abundant than that removed for the entire project.

Additional people moving into the region would exert both long-term and short-term impacts on fish and wildlife. The increased population would be present for at lest the lifetime of the project. Additional hunting and fishing pressure, harassment, and poaching would continue for an indefinite period of time, undoubtedly beyond the 35-year lifetime of the project, and would have an adverse effect on some species. The new environment at the Red Desert Reservoir and New Town may prove a long-term benefit to some wildlife species and their numbers may increase as a result of the project.

Use of power poles as perches by raptors would increase and continue as long as poles were present.

The increased population resulting from IPP within the regional setting could create adverse short-term effects on recreational resources. The overuse and deterioration of developed recreational areas could also occur. Solitude and primitive conditions could be lost within some areas. The impacts of this use would be widely distributed throughout the regional setting, but concentrations could be expected near the new town, on the Henry Mountains, or other nearby mountains, and on the San Rafael Swell. Other values would be affected or foregone for as long as proposed transmission lines remain in the areas of special concern as listed below:

Area	Concern
Black Ridge to St. George	Aesthetics, wildlife habitat, open space
Mahogany Mountain	Wildlife, wild horses habitat, roadless area, open space
Arrow Canyon Range	Roadless area, wildlife habitat, open space
Sidewinder	Recreation, aesthetics, open space

The addition of structures, such as the generating complex facilities and transmission lines, and an increase in urbanization would change the landscape

TABLE 7-1 (continued)

Resource	Reason for Committment	Committment Irreversible	Committment Irretrievable
Water Resources	Commitment of Fremont River water to industrial use.	no	project life
	Increased salinity in the Colorado River.	no	project life
	Loss of natural flow is predicted at one springs and three seeps caused by pumping of ground water.	no	up to 50 years beyond project life
Vegetation	Clearing for construction.	no	until revegetated
	Inundation of riparian vegetation by reservoir and diversion pond.	yes	yes
	Occupancy by buildings, towers, etc.	yes	yes
	Loss of candidate, proposed or officially listed threatened or endangered plants.[a]	yes	yes
	Loss of riparian vegetation at springs and seeps due to ground water pumping.	no	Up to 50 years beyond project life
Animal Life	Loss of wildlife and their reproductive potential through increased habitat loss, inadvertent kills, hunting, and harassment.	no	yes
	Loss of threatened or endangered animals.[a]	yes	yes
Cultural Resources	Disturbance of sites by construction or vandalism.	yes	yes
Recreation and Aesthetics	Increased use of recreational sites.	no	yes
	Contrast of railroad, transmission lines, and other structures.	no	Life of facilities and structures
	Contrast from clearing of vegetation for transmission line construction.	no	until revegetated
	Possible air quality degredation and reduction in visibility.	no	project life

E. CAINEVILLE WASH BORROW SITE

An alternative borrow site for sand and pea size gravel (alternative to site B, see Figure 1-6) is approximately 5 miles southwest of the generating station, near Willow Seep, as shown on Figure 8-3. About 510,000 cubic yards of processed sand and gravel could be obtained from this site. If material were removed to an average depth of 10 feet, about 50 acres of this 440 acre site would be disturbed. The Caineville Wash alternative borrow site, within the primary project area, would be on public land administered by BLM. The existing environment and impacts of the alternative site would be essentially as described in Chapters 2 and 3 for the proposed site.

Adverse impacts which could not be avoided would be alteration of topography and geology. Subsurface cultural or paleontological values not detected in surveys could be lost by the removal of borrow material.

F. ALTERNATE COAL TRANSPORTATION METHODS

1. Coal Slurry Pipeline

A coal slurry pipeline is not part of the IPP proposal. The coal source for the subject power plant is unknown, as is the location, timing, and design of an as yet to be proposed slurry pipeline. Evaluation and analysis in definitive terms is impossible at this time. However, should such a system be proposed by IPP, it would be evaluated and analyzed to fully comply with NEPA. However, under certain conditions, a slurry pipeline could transport coal. At present, a 270 mile slurry pipeline is successfully being used to transport approximately 5.5 million tons of coal per year from the Black Mesa Coal Mine to the Mohave power plant.

In a coal slurry system, coal from the mine goes to a preparation plant where it is processed to a consistency ranging from that of fine sand to that of talcum powder. The pulverized coal is then mixed with about an equal weight of water in which it becomes suspended. The slurried coal is then pumped through the pipeline.

Right-of-way requirements for a coal surry pipeline would be approximately 1/2 the 100-foot width required for the proposed railroad. Pipelines are more energy-efficient (University of Oklahoma, 1975) than other overland coal transportation methods and environmental impacts during construction and operation would be less than a corresponding rail, truck, or conveyor system. They also present a lower safety risk to people and animals than a train or truck system. Some other potential impacts which could be reduced or eliminated include noise and dust pollution, pollution from diesel fuel and conflicts in land use (University of Oklahoma, 1975).

There are also several disadvantages to slurry pipe lines. Probably one of the most crucial is high consumptive water use. Based on IPP's average demand of 8,120,000 tons of coal per year and an equal weight of water for the slurry, about 6,000 acre-feet of water per year would be used to transport the coal. Clarificaton of the slurry water is technically difficult, uneconomical, and poses disposal problems. However, the Mohave power plant is able to use the recovered water as part of the make-up water for its cooling towers (Environmental Science and Technology, Nov. 1976).

If slurry flow were stopped, it would be necessary to drain the slurry to prevent it from settling and clogging the pipeline. This would require that settling ponds be built to contain the drained slurry. These would have the potential problems of water contamination, land commitment, and disposal and containment of the finely crushed coal (Northwest Colorado Coal, 1976).

3. It is estimated that oil pressurizing and pumping-plant facilities would be required about every 15 to 20 miles along the transmission line route over level terrain. In hilly or mountainous terrain, additional facilities would be required to keep large oil pressure differences from damaging the cables.

4. During construction, the environmental impact of an underground system would be similar to that of a pipeline that requires a continuous line of trenching and backfilling. This could result in a considerably greater environmental impact than an overhead system. After construction, access to the cable system would be required for regular maintenance and repair work.

5. Estimated costs for placing the proposed IPP power-transmission system underground would be approximately 17 times the cost of the proposed overhead system.

J. ALTERNATIVE MICROWAVE COMMUNICATION SITE

An alternative to the proposed Moroni Microwave site is the Wood Bench site. It would be located on Wood Bench within IPP's proposed right-of-way for the plant site. Microwave equipment would be housed in an 8 foot by 22 foot prefabricated building. The antennas would be supported on an adjacent tower approximately 70 feet high. Electrical power would be supplied by solar panels and storage batteries. All men, equipment, and supplies would be transported by helicopters. The site would occupy less than 1 acre and be at an elevation of about 5,600 feet.

The site would be located on shallow rocky soils in an area surrounded by cold desert vegetation. Sclerocactus wrightiae, a cactus proposed for endangered status is known to occur in this area. The scenic quality of the area is medium and it is seldom seen. The visual sensitivity of the site is low.

The area has a very low wildlife population and no known archaeological sites.

Table 8-12 compares this alternative to the proposed Moroni Slope site.

K. ALTERNATIVES TO THE PROPOSED LAND SALE FOR THE GENERATING STATION

The Bureau of Land Management does not anticipate management or use problems on the adjacent public lands.

Surface resource values are low in terms of domestic livestock forage; wildlife habitat; recreational and other current uses of natural resources are not extensive.

One option would be for the Department of the Interior to grant a right-of-way for the 4,640 acre power plant site (under Title V of FLPMA) rather than the proposed land sale (Under Title II).

Environmental impacts would essentially remain the same under either land sale or the granting of right-of-way. According to a representative of IPP, participants, except Utah municipalities, would pay in lieu of ad valorem taxes based on the value of project improvements. These payments to local government would be based on 89 percent of the value of project improvements because 11 percent of the electrical power generated would be delivered to Utah participating municipalities.

Park, Arches National Park, and Canyonlands National Park. Table 8.1-1 lists the percentage of time during which violation of Class I increments could occur as a result of power plants located at the candidate study sites.

Because seven of the sites would have required a variance in Class I increments more than 5 percent of the year, the Interagency Task Force focused further studies on the six alternative sites requiring a 5 percent or smaller variance. These studies included socioeconomics, water, ecological factors, land use compatibility, construction and operational costs, and conflicts with other air space uses. The task force used the following to weigh the importance of the components evaluated: socioeconomic criteria--21 percent, water criteria--14 percent, environmental criteria--22 percent, land use criteria--16 percent economic criteria--18 percent, and other air uses--10 percent. Intensive studies by H. E. Cramer Co. estimated sulfur dioxide, particulates, and nitrogen oxide concentrations which could have resulted from each of the six candidate sites. Appendix VIII.1-1 summarizes the findings for five of these six alternative sites. The sixth site is the Lynndyl site.

Based on the various studies, the Interagency Task Force recommended that the Lynndyl and Hanksville sites be considered as alternatives to the Salt Wash site. Air quality studies, however, projected that the Hanksville site would require a variance to meet three-hour Class I SO_2 increments at Capitol Reef National Park (Bowers, et. al., 1978). The Lynndyl alternative site showed no Class I increment violations.

In a letter, dated April 4, 1978, to Cecil D. Andrus, Secretary, Department of the Interior, the participants in IPP stated that it was their intention to study the Lynndyl alternative site while they continued to propose the Salt Wash site. No further engineering-feasibility studies were undertaken by IPP on the Mounds, Beckwith, Desert, Hanksville, or Green River sites.

Preliminary engineering and feasibility studies for the Lynndyl site were prepared by the applicant and received in the BLM Richfield District Office on August 7, 1978. An application for the purchase of power plant site, and rights-of-way for transmission routes, a spur railroad, communication sites, and water conveyance system route were submitted to the Utah State Director, Bureau of Land Management on March 1, 1979.

B. DESCRIPTION OF LYNNDYL ALTERNATIVE

1. General Description

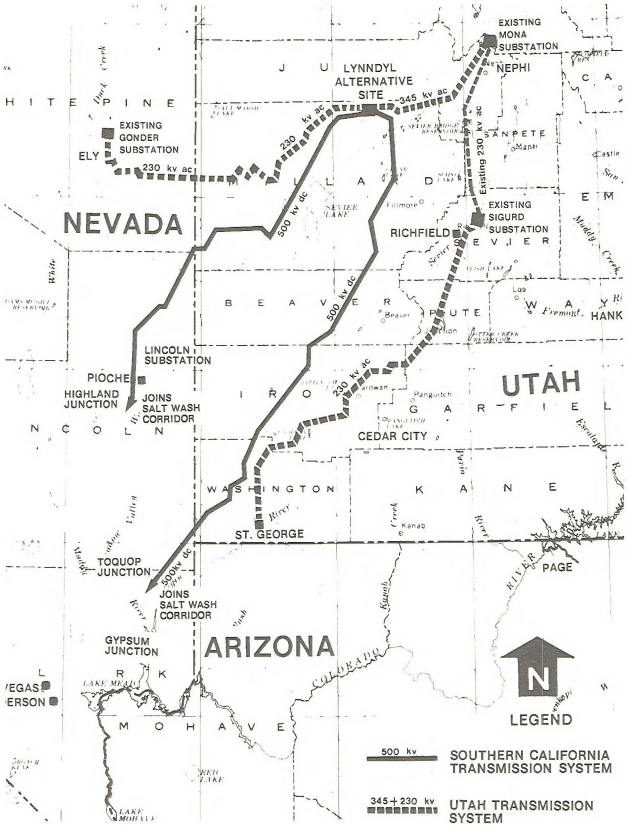
A 3,000 megawatt coal-fired steam generating station would be constructed at the Lynndyl site, about 90 miles southwest of Salt Lake City, Utah. The site location is shown on Figure 8.1-2. Basic plant design would be similar to that described for the Salt Wash site.

Arrangement of facilities on the 4,640 acre site are shown on Figure 8.1-3. A spur railroad for coal delivery, water conveyance system, and borrow materials areas are shown on Figure 8.1-4. The power transmission systems are shown on Figure 8.1-5.

Tables 8.1-2 and 8.1-3 summarize the approximate magnitude of IPP's land and material needs for the Lynndyl alternative. Material and land needs for the Lynndyl and Salt Wash sites differ because of differences in length of transmission systems, access roads, etc.

2. Raw Materials

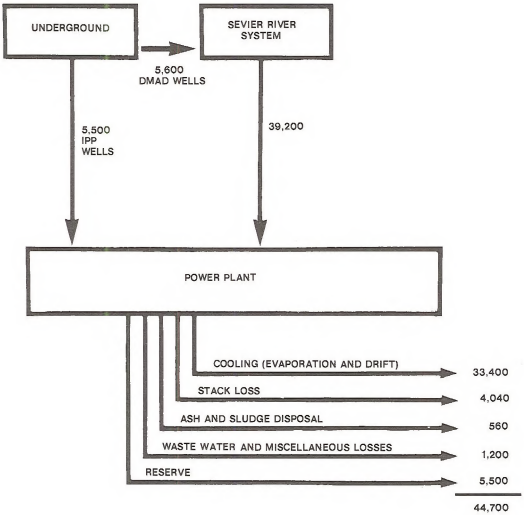
The proponents of IPP have identified raw materials needed to operate the project at the Lynndyl site. Materials include coal, water, lime, and borrow material (sand, crushed rock, and gravel).



LYNNDYL TRANSMISSION SYSTEM

FIGURE 8.1-5
CORRECTION
8.1-9

DESCRIPTION OF THE ALTERNATIVE



NOTE: ALL NUMBERS INDICATE ACRE FEET OF WATER PER YEAR, BASED ON ANTICIPATED MEAN AVERAGES, NORMAL WEATHER CONDITIONS, AND AN 85% PLANT CAPACITY FACTOR.

LYNNDYL ALTERNATIVE WATER BUDGET

FIGURE 8.1-7a
(Replaces figure 8.1-7)

TABLE 8.1-12 (continued)

Project Feature	Magnitude	Authorizing Actions	Authority
Utah Transmission System: This system would have 345-kV and 230-kV facilities.	179 miles of new right-of-way would extend across public lands in Utah and eastern Nevada.	Grant right-of-way.[a]	Title V of Federal Land Policy and Management Act of 1976 (90 stat. 2776, et seq.).
		U.S. Fish and Wildlife Service	
Fremont River Diversion and pipeline with pumping plant and access roads. Stream crossings with power transmission lines and railroad.	Proposed facilities would divert all surface water from Fremont River during non-irrigation seasons into Red Desert Storage Reservoir. Pipelines would cross streams, in addition, power lines and access roads would cross four states	Comment on Corp of Engineers permits for placement of structures and fill in navigable waters.	Fish and Wildlife Coordination Act of 1958, as amended. 72 Stat. 6-563; 16 U.S.C. 661 et Seq.
		Forest Service (Dixie National Forest)	
Microwave Stations			
Big Mountain Microwave Communication System.	Equipment to be installed at existing facility.	Grant right-of-way.	Title V of Federal Land Policy and Management Act of 1976 (90 stat. 2776, et seq.).
Southern California and Utah Transmission Systems			
Two electrical power transmission lines; one 500-kV and one 230-kV.	35 miles of transmission line would cross National Forest.	Grant right-of-way.[a]	Title V of Federal Land Policy and Management Act of 1976 (90 stat. 2776, et seq.).
		(Fishlake National Forest)	
Utah Transmission System			
Three electrical power lines, one 230-kV and two 345-kV.	Nine miles of transmission line would cross National Forest.	Grant right-of-way.[a]	Title V of Federal Land Policy and Management Act of 1976 (90 stat. 2776, et seq.).
		(Humboldt National Forest)	
Utah Transmission System			
One 230-kV electric power transmission line.	Eight miles of transmission line would cross National Forest.	Grant right-of-way.[a]	Title V of Federal Land Policy and Management Act of 1976 (90 stat. 2776, et seq.).
		Federal Communication Commission	
Microwave Communication Station.	One new microwave station would be constructed in Utah. Additional equipment would be installed at nine existing stations.	Grant license to construct new station and continue utilization of existing stations.	Act of June 19, 1934 as amended; 48 stat. 1082; 47 U.S.C. 303; 47 CFR 1.70.
		Rural Electrification Administration	
Intermountain Power Project.	3,000 MW coal-fired generating station and ancillary features.	Approve participation of Rural Electric Cooperatives in project.	Rural Electrification Act of of 1936, 49 stat. 1363, Chap. 31; 7 U.S.C. 901-950(6).
		Federal Aviation Agency	
Concrete Chimneys (stacks).	Two stacks 710 feet tall would be constructed within power generating complex. Might affect navigable air space.	Issue Air Space Permit.	Federal Aviation Act of 1958, 72 stat. 749; 797, 49 U.S.C. 1347, 1501; 14 CFR 77.

TABLE 8.1-14

Local Authorizing Actions

Project Feature	Magnitude	Authorizing Actions	Authority
		Utah Millard County	
Power plant and ancillary facilities.	Approximately 11,000 acres of right-of-way requests.	Zoning Variance.	Millard County Zoning Ordinance
		Nevada Lincoln County	
		Lincoln County Commission	
Southern California System.	Two 500-kV d.c. power line 168 miles.	Grant Use Permit.	Various county regulations.
		Road Department Must issue encroachment permit before transmission lines are constructed across county or municipal roads.	

There are four general climatic zones in the areas of the proposed transmission routes: (1) cold desert (high elevation), (2) hot desert (low elevation), (3) mountains, and (4) mountain valleys. Table 8.2-2 summarizes precipitation along the proposed routes.

3. Air Quality

a. Standards

Prevention of Significant Deterioration (PSD)

The Lynndyl site would be located in a Class II Prevention of Significant Deterioration area and the nearest existing Class I area (extremely limited air quality degradation permitted), Capitol Reef National Park, is over 93 miles southeast of the site. The Deep Creek Mountain area, 66 miles northwest of the Lynndyl site, is being considered by BLM for possible recommendation to the State of Utah for redesignation to Class I status.

Under the Clean Air Act Amendments of 1977, BLM can only recommend this area for redesignation to the State of Utah.

Authority to redesignate this area to Class I air quality status rests solely with the State. It is unlikely that the State of Utah would pursue such a designation (see State of Utah Comments, Letter 30).

b. Existing Air Quality

Few ambient air quality data measurements have been made in the vicinity of the Lynndyl alternative site. Particulate concentration measurements, made by the State of Utah between August and December 1977, show that the 24-hour secondary National Ambient Air Quality Standard (NAAQS) for particulates (150 micrograms per cubic meter [$\mu g/m^3$]) is exceeded on occasion in nearby Delta, Utah. The Utah Bureau of Air Quality, however, believes that the measurements were not representative of ambient air quality because the high volume sampler is near several roads. Because the Lynndyl site is in a rural area without nearby significant point sources of pollution, data from other rural Utah areas, which are also isolated from major point sources, are indicative of the approximate levels of pollutants in the Lynndyl site area (Bowers, et al., 1978a). Although Brush Beryllium (located approximately 8 miles each of the plant site) has the potential for a significant level of emissions, the use of best available control technology makes it an insignificant point source of emissions.

All monitoring sites in rural Utah where particulate concentration measurements were routinely made showed occasional violations of the 24-hour primary NAAQS for particulates (260 $\mu g/m^3$) or the 24-hour secondary NAAQS for particulates (150 $\mu g/m^3$). The high short-term particulate concentrations in rural Utah appear to be caused by natural sources and activities such as agriculture, cattle grazing, and transportation (Hill, et al., 1976). Observed annual mean particulate concentrations in rural Utah, typically about 20 $\mu g/m^3$, are below the primary and secondary annual particulate NAAQS (75 and 60 $\mu g/m^3$).

Hourly sulfur dioxide (SO_2) concentrations at most locations in rural Utah are almost always below the threshold of measurement (26 $\mu g/m^3$). The highest 3-hour and 24-hour average SO_2 concentrations reported by Berman and Baskett (1976) for rural Utah are 156 and 60 $\mu g/m^3$, respectively. Both concentrations, measured in the Warner Valley in southern Utah, are well below the 3-hour and 24-hour NAAQS for SO_2 (1,300 and 365 $\mu g/m^3$). The Warner Valley SO_2 concentrations are relatively high in comparison with the SO_2 concentrations observed at other locations in rural Utah (Bowers, et al., 1978a).

DMAD Reservoir during the irrigation season in exchange for water held in Sevier Bridge Reservoir. Only storage for a single irrigation season is held in these reservoirs and storage duration is less than 3 months, except in exceptionally plentiful water supply years.

Downstream from the Fool Creek Reservoir complex, the Sevier River is impounded in the 11,000 acre-foot DMAD Reservoir. The 4,550 acre-foot Gunnison Bend Reservoir, downstream and west of Delta, also impounds water from the river (see Figure 8.2-9). These reservoirs operate similarly to Sevier Bridge Reservoir.

The Delta-Melville-Abraham-Deseret (DMAD) irrigation companies have developed eight wells adjacent to the Sevier River between the Central Utah Canal diversion and DMAD Reservoir. These wells tap a deep ground water aquifer and are pumped directly into the river. In 1972, 14,200 acre-feet of high quality water was supplied from the wells. DMAD Irrigation Companies are in the process of fully developing these wells and it is assumed that they will pump more water in the future.

Below Gunnison Bend Reservoir, the Sevier River receives only minor flows which come mainly from return irrigation flows and drainage ditches. In exceptionally high flow years, when flows exceed storage capacity above Gunnison Bend, water is spilled below Gunnison Bend to the Sevier Lake Playa.

Nine irrigation companies divert an average of 165,000 acre-feet of water from the Sevier River which is used to irrigate over 70 percent of the total irrigated acres within the study area.

Sevier River Water Quality

In general, dissolved solids increase in the Sevier River as it flows toward Sevier Lake. Part of this degradation in water quality occurs naturally because the river picks up soluble minerals and salts from soils and rocks, and the minerals and salts are concentrated by evaporation and evapotranspiration. Man's activities, agriculture in particular, also account for much degradation because the surface water of the Sevier River is totally diverted and irrigation return flows are reused by downstream irrigators.

Generally, Sevier River water quality is better during high flows than during low flows. However, dilution from good quality inflow, primarily from Molten and Blue Springs, reverses that relationship in the river between its confluence with Chicken Creek and the diversion point for the Central Utah Canal (see Figure 8.2-9).

When water is diverted from the Sevier River to the Central Utah Canal and the Fool Creek Reservoirs, there is a significant increase in dissolved solids at Lynndyl. The increase occurs because spring water does not reach the Lynndyl gauging station and the river's total flow is return flow water. Dissolved solid concentrations vary from 1,500 to 2,000 parts per million (p/m) for Sevier Bridge releases, 400 p/m for spring water, and 2,300 to 3,100 p/m for return flows.

Water quality in the DMAD and Gunnison Bend Reservoirs reflects the degradation of the Sevier River flow due to drainage or seepage return from irrigated lands. The quality in these reservoirs is sensitive to the mixing of Sevier Bridge Reservoir releases, Molten and Blue Spring discharges, pumping from deep wells, and return flows. Both reservoirs are affected by the storage of poorer quality return flow water during the nonirrigation season. Gunnison Bend exhibits a slightly poorer quality than DMAD Reservoir at the irrigation season's end. The quality of water in Gunnison Bend Reservoir degrades to approximately 2,000 p/m total dissolved solids.

According to herbarium and field searches conducted by Dr. Stanley Welsh, 23 threatened or endangered plant species occur within the Lynndyl regional setting. Appendix VIII.2-3 lists those plants known to occur in the regional setting. One of these has been officially listed as threatened by the U.S. Fish and Wildlife Service. Five are proposed endangered (Federal Register, June 16, 1976). One is a candidate endangered species and 16 are candidate threatened species. The status of proposed and candidate threatened and endangered plant secies is being evaluated and they may be officially listed or removed from consideration.

b. Project Area

The Lynndyl site supports cold desert vegetation, largely shadscale. Cold desert vegetation also occurs at the five proposed borrow areas and about 10 acres of alfalfa is growing at borrow area A. All of the proposed borrow areas have been previously disturbed. Figure 8.2-A shows vegetation along the proposed railroad spur and the proposed water supply pipeline.

Literature reviews and on-site investigations do not show any candidate or proposed threatened or endangered plant species at the proposed power generating station site, along the railroad route, or along the water pipeline route (Welsh, 1978a). Investigations for candidate or proposed threatened and endangered species have not been conducted at the borrow areas.

c. Power Transmission Systems

The transmission systems would cross cold desert shrub, pinyon-juniper, agricultural, and hot desert vegetation (see Figures 8.2-B through 8.2-G).

Appendix VIII.2-10 and 11 lists proposed endangered plant species which occur within about 2.5 miles of transmission routes for each state affected.

8. Animal Life

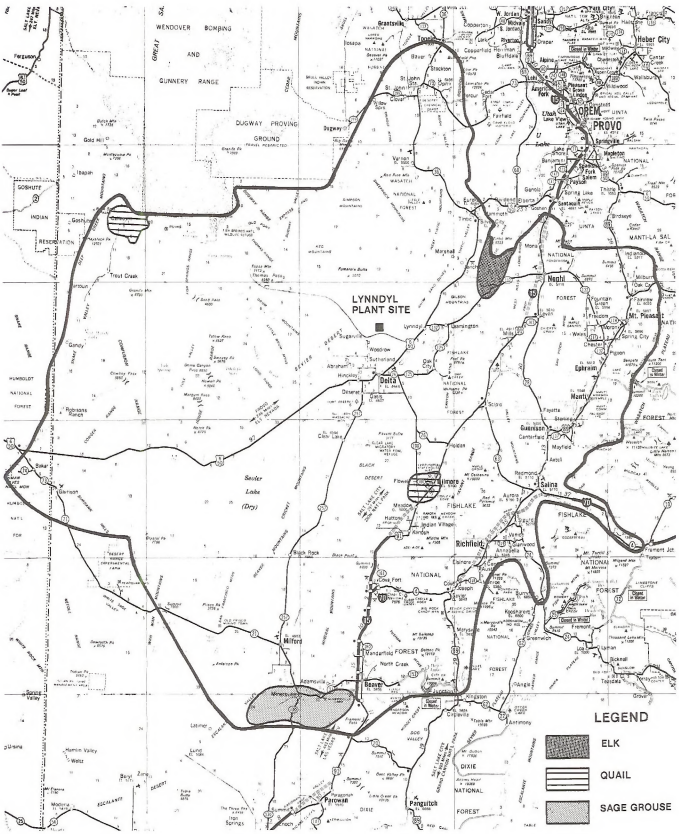
Wild animals are discussed in this section. Domestic livestock are considered under land use.

a. Regional Setting

Approximately 424 species of vertebrate wildlife, 351 of which are protected by law, are found within the regional setting. Included are 26 fish species (12 protected, nongame and 14 protected, game), 29 species of reptiles and amphibians (all protected), 283 bird species (2 protected, endangered; 234 protected, nongame; and 47 protected, game), and 86 mammal species (71 unprotected, nongame; 1 protected, nongame; and 14 protected, game).

(1) Terrestrial

Of the 396 species of terrestrial wildlife found in the regional setting, 61 species are game animals. Big game species in the area include elk, mule deer, pronghorn antelope, mountain lion, and black bear. Mule deer are the most abundant big game species found in the region. Pronghorn antelope, though not abundant, are widespread west of Delta, Utah. Mountain lion and black bear are found in small numbers, generally at higher elevations. Figure 8.2-13 shows big game distribution.



GENERAL DISTRIBUTION OF BIG GAME AND UPLAND GAME

CHANGES OF FIGURE 8.2-13
& FIGURE 8.2-14

8.2-34
8.2-36

Major upland game species include chukar partridge, ring-neck pheasant, ruffed grouse, blue grouse, sage grouse, California and Gambel quail, mourning dove, band-tailed pigeon, cottontail rabbit, and snowshoe hare. Ring-necked pheasants are dependent on the agricultural lands of the region. In desert areas, upland game species are often concentrated around water sources. Figure 8.2-14 shows upland game distribution.

Many waterfowl nest in the region, but most waterfowl use is during spring and fall migration. Figure 8.2-15 shows the major waterfowl use areas. The areas have been classified by the Utah Division of Wildlife Resources according to their importance to waterfowl. DMAD and Gunnison Bend Reservoirs are classed as important to migrating waterfowl. Clear Lake is classed as a 1st magnitude marsh which is important for waterfowl reproduction, migration, and wintering. Topaz Slough is a 2nd magnitude marsh which is beneficial to waterfowl during the spring and early summer period of each year. All other areas are classed as incidental waterfowl habitat because they contain water only in extremely wet years (Jensen, 1974).

A spring census conducted on Fool Creek Reservoirs, shown on Figure 8.2-16 found over 2,000 waterfowl present. Most of these were migrant birds (Jensen, 1974). A summer census of six of the intermittant lakes associated with irrigation in a wet year in the Delta area showed an approximate average of 110 waterfowl and 175 other marsh associated birds present at each lake. Most of these probably were breeding birds (Farnsworth, 1978).

Predatory and fur-bearing mammals are widely distributed throughout the region and include: coyote, fox, bobcat, badgers, skunks, beaver, and muskrat. No areas of concentration have been identified for these species.

Raptors are wide-spread throughout the region. Many raptor nesting areas are located in the mountain ranges of the West Desert of Utah. Golden eagles, red-tailed and ferruginous hawks, and prairie falcons are the most common nesting species.

Endangered species found in the region are the bald eagle and peregrine falcon. The peregrine falcon is wide ranging and has been known to occur and nest in the region, although no active eyries for this species are known in the area. The bald eagle is a winter resident with concentrations along the Sevier River system, at Fish Springs, Clear Lake, Rush Valley, Minersville Reservoir near Beaver and Milford, and Garrison Reservoir. The generally winter along all major water courses of the state.

(2) Aquatic

Warm water and cold water fisheries are located within the region. Major cold water fisheries include Minersville Reservoir, Oak, Corn, Chalk, and Meadow creeks, and several lakes and streams in the Tushar Mountains (see Figure 8.2-9). These waters support brown, brook, cutthroat, and rainbow trout.

Warm water fisheries are found in Sevier Bridge Reservoir, DMAD Reservoir, Gunnison Bend Reservoir, and the lower Sevier River. The major warm water fish include walleye, white bass, white crappie, yellow perch, bluegill, and channel catfish. In addition, carp, Utah suckers, and Utah chub are found in abundance in these waters.

No threatened or endangered fish species are found in the region. The least chub, the Utah cutthroat and the Snake Valley cutthroat have limited distribution in the desert springs or mountain streams.

b. Project Area

(1) Terrestrial

The Lynndyl power generating station, coal haul railroad, water pipeline, and borrow areas would be located mainly on "cold desert habitat." Small mammals, snakes, lizards, and perching birds are the primary animal inhabitants. Game species are mainly limited to mourning doves and cottontail rabbits, although deer and chukar partridge could be found at some of the borrow areas, and pheasants could be occasionally found throughout the project area.

The peregrine falcon and bald eagle are the only endangered species within the project area. No peregrine falcon nests are known to exist in the vicinity. A few bald eagles winter along the Sevier River and DMAD Reservoir. No threatened species are known to exist in the area.

(2) Aquatic

Fish species inhabiting DMAD Reservoir at the water intake include white bass, walleye, channel catfish, and carp. No threatened or endangered fish are known to exist in the area.

c. Power Transmission System

(1) Terrestrial

Habitats of game species crossed by the transmission line routes are shown on Figures 8.2-B through 8.2-G. In Utah, cricital deer winter range would be crossed along the west side of Monroe Mountain, on the southeast slopes of the Tushar Mountains, and on the north end of the Pine Valley Mountains (Figure 8.2-F). A deer fawning area would be crossed near Ox Valley. In Nevada, critical deer winter range would be crossed in the Limestone Hills (Figure 8.2-B).

Sage grouse habitat would be crossed by transmission lines in Utah and Nevada. In Utah, nesting and brooding areas would be crossed in Dog Valley in Garfield County (Figure 8.2-F) and in another Dog Valley in Juab County (Figure 8.2-D). The transmission line would pass within a mile of a strutting ground in Garfield County. Locations of strutting grounds are unknown in Dog Valley in Juab County. A brooding area would be traversed by the transmission line in Spring Valley, Nevada (Figure 8.2-E).

Raptors are distributed along the entire transmission line system. Known raptor nesting areas in the vicinity of the proposed lines are in the House Range, Confusion Range, Barn Hills, and Limestone Hills (Figures 8.2-B and E).

Endangered species which occur along the transmission line are the bald eagle (endangered), peregrine falcon (endangered), and Utah prairie dog (endangered). Bald eagles are winter residents primarily along water courses. There are winter concentration areas in Parowan and Cedar Valleys. Inventories of roosting sites are not complete, however, one roosting site is within 1/4 to 1/2 mile of the Sigurd to Paragonah route (mileposts 75-85). An other area along the Paragonah substation to St. George route (milepost 5-10) also has winter roosting sites. Although peregrine falcons are wide ranging, no eyries are known to be located in the vicinity of the proposed transmission lines. Utah prairie dog colonies can be found in Buckskin Valley, Parowan Valley, and Cedar Valley, Utah (Figure 8.2-F and G).

The transmission lines would not cross critical habitats of the desert tortoise (Beaver Dam Slope population) on the west side of the Beaver Dam

The area through which the California System would pass is largely undeveloped open space. A 230-kV power line presently exists along the proposed Utah transmission route.

Areas of high quality scenery (Class A) along the transmission lines are also shown on Figure 8.2-18 and listed on Table 8.2-9.

11. Land Uses

In addition to the project area, several regions have been defined to describe land uses. The regions are: 1) the DMAD and the Central Utah Canal service areas; 2) Millard County; 3) Millard and Juab counties; and 4) the travel influence zone regional setting.

a. Regional Setting

Irrigation water distribution, crop yields, cropping patterns, and consumptive use of water in the DMAD and Centraul Utah Canal Service areas of Millard County are shown on Tables 8.2-11 through 8.2-14.

The Soil Conservation Service has not yet completed its inventory of prime and unique farmlands in Millard County (see Appendix II-15 for definitions).

The land uses of incorporated communities in Millard and Juab counties are listed on Table 8.2-15.

There are no designated wilderness areas, primitive areas, or natural areas within the regional setting. United States Forest Service (USFS) administered lands have been evaluated for wilderness values in the Roadless Area Review and Evaluation II (RARE II). Within the regional setting, the RARE II Final Environmental Statement recommends one area for wilderness designation and two areas for further study for wilderness or multiple use mangement. All other RARE II areas in the regional setting were recommended as non-wilderness.

An accelerated wilderness review of BLM administered lands that would be directly affected by proposed IPP facilities has identified five Wilderness Study Areas (WSAs) within the regional setting (Appendixes II-16 and II-17 define wilderness terms). Wilderness review of other BLM administered lands in the region has identified nine roadless units that may have wilderness character. All currently identified areas with potential for wilderness designation are listed in Table 8.2-16 and their location is shown on Figure 8.2-19.

Table 8.2-17 summarizes design and volume data for the major highways in the area.

b. Project Area

Land ownership for the Generating Station, support facilities, water supply system, 46-kV transmission line, and railroad is described in Chapter 1.

The entire project area is allotted to livestock grazing. The proposed borrow areas have all been previously used to obtain borrow material.

BLM administered lands within the project area have been inventoried for wilderness values and were determined not to possess wilderness character.

TABLE 8.2-11

Irrigated Land Within Delta-Melville-Abraham-Deseret (DMAD) Service Area

Company	1972 (Average Year) Acres of Irrigated Land
Delta	17,860
Melville	8,530
Abraham	9,060
Deseret	15,580
Total	51,030

Source: Intermountain Power Project Hydrology Report, Hamer, et al., 1978.

TABLE 8.2-12

DMAD Service Area Cropping Pattern and Consumptive Use of Water

Crop	Percent of Planted Acres	Consumptive Use (inches)	Annual Yield/Acre
Alfalfa hay	32	30	4 ton
Alfalfa seed	40	12	400 lb.
Grain	18	17	60 bu.
Corn	10	21	18 ton

Source: Intermountain Power Project Hydrology Report, Hamer, et al., 1978.

TABLE 8.2-16

Currently Identified Areas With Potential
For Wilderness Designation in the Regional Setting

Map Number[a]	Name	Decision Document, Reference and Date
1.	Santaquin (4-720)	Recommended for "Further Planning," RARE II Final Environmental Statement, January, 1979.
2.	Nephi (4-729)	Recommended for "Further Planning," RARE II Final Environmental Statement, January, 1979.
3.	Stansbury (4-757)	Recommended for "Wilderness," RARE II Final Environmental Statement, January, 1979.
4.	Deep Creek Mountain (UT-050-020, UT-020-060, NV-040-077)	West Desert Planning Unit Management Framework Plan, 1973. Deep Creek Mountains Management Area Proposal, 1977.
5.	Howell Peak (WSA UT-050-077)	Accelerated IPP Wilderness Inventory, March, 1979.
6.	Notch Peak (WSA UT-050-078)	Accelerated IPP Wilderness Inventory, March, 1979.
7.	King Top (WSA UT-050-070)	Accelerated IPP Wilderness Inventory, March, 1979.
8.	Conger Mountain (WSA UT-050-035)	Accelerated IPP Wilderness Inventory, March, 1979.
9.	Little Sahara - Rockwell (WSA UT-050-186)	Accelerated IPP Wilderness Inventory, March, 1979.
10.	Onaqui Mountains (UT-020-111)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979
11.	Dugway Range (UT-020-129, UT-050-130A)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979
12.	Thomas Range (UT-050-113)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979
13.	Fish Springs (Ut-050-127)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979

14.	Swasey Mountains (UT-050-061)[b])	BLM Utah Final Initial Wilderness Inventory, August, 1979
15.	Kern Mountains (UT-050-019, (NV-040-079)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979
16.	Granite Spring (UT-050-029, NV-040-086)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979
17.	Wah Wah Mountains (UT-050-073, UT-040-205)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979
18.	Central Wah Wahs (UT-040-204)[b]	BLM Utah Final Initial Wilderness Inventory, August, 1979

[a]Refers to numbers on Figure 8.2-19.

[b]These areas were identified from BLM's wilderness review after the DES was printed. They are, therefore, not shown on Figure 8.2-19 of the FES, but are shown on BLM's Final Initial Wilderness Inventory State of Utah Map, available at all Utah BLM offices.

c. Power Transmission Systems

The transmission lines would cross five land use categories--open range, forest, urban, agricultural and barren. The location of these are shown on the environmental profiles on Figures 8.2-B through 8.2-G.

The power transmission systems would be proximate to three areas that have been recommended for further planning by the Forest Service in the RARE II Final Environmental Statement. Other RARE II areas along the proposed transmission system have been recommended for non-wilderness. The transmission system would be proximate to four and would pass through one Wilderness Study Area (WSA) identified by the BLM. The system would be proximate to one BLM Instant Study Area (ISA) and would pass through one uninventoried BLM roadless unit. Table 8.2-18 lists areas with potential for wilderness designation and Figure 8.2-20 shows their locations.

12. Land Use Plans and Controls

a. Regional Setting

The existing Millard County Master Plan of Land Use was adopted by the Millard County Commission in January of 1970. At that time, the county was divided into seven zones: open range and forest (RF-1), forest and recreation (FR-1), agriculture (A-1), residential (R-1), community commercial (CC-1), highway commercial (HC-1), and manufacturing (M-1) (Master Plan of Land Use for Millard County, Utah 1970).

The county has hired a planner who is updating the Master Plan. The update is emphasizing goals and policies concerning IPP. The planner has initiated a land use inventory, and is assisting the small towns to establish planning and zoning ordinances. County officials in Millard County have expressed a desire to prevent uncontrolled "boom town" growth in the Delta-Lynndyl area (Shaw, 1979). Planning commissions have been organized for Millard County and for the towns of Delta and Fillmore.

b. Project Area

The project area is located within BLM's Richfield District, House Range Resource Area. Currently, BLM's planning documents do not consider facilities such as a power generating station and ancillary facilities. Millard County has designated this area open range and forest (RF-1).

c. Power Transmission System

Table 8.2-19 shows the status of federal land use plans and the responsible agency along the proposed transmission line routes. Locations are shown on Figures 8.2-B through 8.2-G.

All areas crossed by the transmission lines are either unzoned or zoned rural--open space--agricultural.

13. Human Resources

Population

Populations of Millard and Juab counties are shown on Table 8.2-20. Since 1960, more than 55 percent of Juab County's population has been concentrated in Nephi. The combined population of Delta and Fillmore accounted for

TABLE 8.2-18

Areas With Potential for Wilderness Designation
Along the Proposed Transmission System

Map Reference Number	Administering Agency	Name of Area	Proposed Transmission System Segment (California)	Location of Proposed T/L Segment to Identified Area	Documentation
1	BLM	King Top, WSA UT-050-070	Lynndyl to Highland Jct. (California System)	Corridor is approximately 1/2 mile within area (milepost 71 to 75).	IPP accelerated Wilderness Inventory, March, 1979.
2.	BLM	Fortification Range WSA NV-040-177	Lynndyl to Highland Jct. (California System)	Proximate[a]	IPP accelerated Wilderness Inventory, March, 1979.
3.	BLM	Notch Peak, WSA UT-050-078	Lynndyl to Gonder (Utah System)	Proximate	IPP accelerated Wilderness Inventory, March, 1979.
4.	BLM	Howell Peak, WSA UT-050-007	Lynndyl to Gonder (Utah System)	Proximate	IPP accelerated Wilderness Inventory, March, 1979.
5.	BLM	Conger Mountain, WSA UT-050-035	Lynndyl to Gonder (Utah System)	Proximate	IPP accelerated Wilderness Inventory, March, 1979.
6.	USFS	Mt. Moriah, 4-352	Lynndyl to Gonder (Utah System)	Proximate	RARE II Final Environmental Statement, January, 1979.
7.	USFS	Wheeler Peak, 4-359	Lynndyl to Gonder (Utah System)	Proximate	RARE II Final Environmental Statement, January, 1979.
8.	BLM[b]	Pygmy Sage, ISA NV-040-099	Lynndyl to Gonder (Utah System)	Proximate	IPP accelerated Wilderness Inventory, March, 1979.
9.	BLM[b]	Swamp Cedar, ISA NV-040-089	Lynndyl to Gonder (Utah System)	Proximate	IPP accelerated Wilderness Inventory, March, 1979.
10.	BLM	Uninventoried Roadless Unit NV-040-100	Lynndyl to Gonder (Utah System)	Corridor is approximately 200 feet within unit (milepost 106 to 109).	IPP accelerated Wilderness Inventory, March, 1979.
11.	BLM	Wah Wah Mountains[c] WSA UT-050-073	Lynndyl to Highland Jct. (California System)	Proximate	BLM, Utah Final Initial Wilderness Inventory August, 1979.

[a] "Proximate" is defined as within 5 miles of and visibile from the identified areas with potential for wilderness designation.

[b] Intensive inventory documented the lack of wilderness character within these units, but the BLM must protect these Instant Study Areas and their contiguous roadless acreage from physical disturbance until Congress acts on the Bureau's recommendation of non-suitable for wilderness designation.

[c] This WSA was identified from BLM's wilderness review after the DES was printed. It is therefore not shown on Figure 8.2-20 of the FES, but is shown on BLM's Final Initial Wilderness Inventory Map, available at all Utah BLM offices.

Total Personal Income

Table 8.2-24 shows personal income for 1970 and 1976 in Juab and Millard counties and the State of Utah. Since 1970, Juab County personal income has increased by $5,201,000 (43.2 percent), and Millard County personal income has increased by $13,830,000 (81.6 percent). The State of Utah's increase (91.0 percent) was higher than in the two counties.

Per Capita Income

Per capita income, in Millard and Juab counties, lags behind the State of Utah's by 28 percent and 34 percent respectively. Table 8.2-25 shows per capita income.

In Millard County, per capita income increased by $1,213 between 1970 and 1976--an average annual rate of 6.7 percent. Juab County had an increase of $1,185 for an average rate of 7.1 percent per year during the same period. Per capita income in the State of Utah increased by $2,181--an average annual rate of 9.1 percent.

Infrastructures

Transportation Systems

Air and Rail Services

Delta and Fillmore have municipal airports, each having facilities for both private and commuter airplanes. Sky West Airlines is the only airline providing commuter service to the area and offers daily service to and from Salt Lake City.

No passenger rail service is provided in the area, but the Union Pacific Railroad does provide freight service to Eureka, Delta, Fillmore, and Nephi.

Public Utilities

Water

All municipalities in the area have central water distribution systems. Water for domestic purposes, in unincorporated areas, is supplied by individual wells. Table 8.2-26 presents data for the municipal water supply systems in the area. New water rights are only being granted to individuals who locate on large parcels of land in unincorporated areas. Municipalities can only increase their water supply by purchasing existing water rights.

Sewage System

The only municipalities with central sewage treatment facilities are Delta, Eureka, Nephi, and Fillmore. All other towns and unincorporated areas use individual septic tanks for sewage treatment. Table 8.2-27 lists existing sewage treatment facilities and their capacities in Millard and Juab counties.

Solid Waste

With the exception of Nephi, no regular solid waste pick-up service is provided. Each city, town, and county has its own open dump. Until sanitary

TABLE 8.2-26

Existing Municipal Water Systems in the Millard and Juab Counties

Area	Est. 1978 Population Served	Water Rights--Capacity[a] Population Served	Storage Capacity[a] Population Served	Status of System[c]
Delta-Lynndyl Area				
(West Millard County)				
Delta	2,177	8,930	2,475	Approved
Hinkley	434	667	413	Class Pending
Lynndyl	111	1,099	208	Prov. Approved
Oak City	332	1,026	495	Approved
Leamington	111	667	248	Approved
Total Municipalities	3,192	12,281	3,838	
Unincorporated Areas	1,085			
Total	4,250			
Eureka Area				
(West Juab County)				
Eureka	814	1,939	720	Class. Pending
Unincorporated Area	277			
Total	1,091			
Nephi Area				
(East Juab County)				
Nephi	3,488	19,130	10,400	Class. Pending
Mona	510	195	400	Prov. Approved
Levan	464	1,293	720	Class Pending
Total Municipalities	4,462	20,618	11,520	
Unincorporated Areas	221			
Total	4,683			
Fillmore Area				
(East Millard County)				
Fillmore	1,897	2,666	2,432	Prov. Approved
Holden	391	666	1,238	Class. Pending
Meadow	272	7,118	371	Class. Pending
Kanosh	374	800	285	Class. Pending
Scipio	247	880	264	Class. Pending
Total Municipalities	3,181	12,730	4,590	
Unincorporated Area	1,000			
Total	4,261			

Source: Compiled by Architects/Planners Alliance from Wistison, Division of Water Rights of the State of Utah and interviews with local officials.

[a]Based on State Health Standards as follows: Supply: 1,600 gallons per connection per day.
Storage: 800 gallons per connection.

[b]Based on 3.3 persons per connection in Millard County and 3.2 persons per connection in Juab County (same as household size for each county).

[c]Approved means water meets state health standards. Provisionally Approved means some water quality problems exist, but system is generally safe for public health. Classification Pending means system is marginal in meeting health standard (i.e., has bacterial concern, new system and not sure of quality, old system--rust from pipe possible problem, etc.

landfill standards are imposed, under the Resource Conservation and Recovery Act, growth of each of these open dumps is unlimited.

Presently in Millard County, officials are exploring the idea of providing a centralized sanitary landfill for all local governments.

Education

Table 8.2-28 presents school enrollment, capacity, plans for new schools, and bonding status for schools within the area.

Public Safety

Law Enforcement

There are currently 12 full-time and four part-time law enforcement officers in Millard County. According to the Millard County Sheriff (1978), there is a need for four additional men and additional vehicles in the area.

In 1978, the crime rate for Millard County was about 9 "part I offences" (murder, rape, robbery, assault, and theft) per 1,000 people. The County Sheriff's office noted that most of their cases involve thefts and burglaries. Recently, there has been an increase in drug traffic.

There are a total of 19 law enforcement personnel in Juab County. In addition, there are 40 members of a county reserve patrol organization.

In 1976 there were 319 reported crimes in Juab County. A majority of these were for motor vehicle violations and public intoxication. The major change reported for 1977 was an increase in thefts.

Although Millard County has a jail, located in Fillmore, the facility appears to have limited utility and usefulness. In 1977, a fire destroyed much of the jail, and although it has since been repaired, the Millard County Sheriff is not satisfied with the facility and does not use it. Instead, under a contractual arrangement, Millard County prisoners are housed in 26 person capacity tri-county (i.e., Millard, Juab, and Sanpete counties) jail in Nephi. This use of the jail in Nephi appears to be satisfactory at present, as the normal prisoner load ranges from seven to nine. Because the above mentioned tri-county jail is in Nephi, Juab County's jail situation is excellent.

Fire Protection

Fire protection facilities within the area are supplied by the municipalities. Protection in smaller communities and unincorporated areas is carried out by adjacent cities under mutual aid agreements.

Public Health

Hospitals and Clinics

The population in Millard and Juab counties is served by hospitals in Nephi, Fillmore, Delta, and a medical clinic in Eureka. The Nephi hospital has 31 beds and operates at about 48 percent occupancy. The hospital in Delta has 36 beds and is operating at about 90 percent occupancy. The Fillmore hospital has a 22 bed capacity including several permanent nursing care beds. The occupancy rate is between 25 and 30 percent. In addition, the Fillmore facility has outpatient care including an X-ray lab, inhalation treatment, and physical therapy.

improvement. Only 44 percent of the people think schools are exceptional and 43 percent felt schools were satisfactory. The perception of cultural activity is that 57 percent feel it is satisfactory and 30 percent feel it needs improvement. Most residents of the area recognize possible trade-offs between having environmental economic changes and living in a small town atmosphere.

14. Probable Future Environment Without the Project

a. Air Quality

Occasional violation of the National Ambient Air Quality Standards (NAAQS) for particulate matter can be expected to continue due to wind blown dust. No other violations of NAAQS are anticipated since neither industrial nor population growth is expected to rapidily increase. The Delta-Lynndyl area will probably remain a Class II airshed under the Federal Prevention of Significant Deterioration Regulations.

b. Paleontology

Increased visitor use of the paleontological resources in the area will result in losses due to collecting and vandalism.

c. Soils

Important changes in soils are not expected during the next 35 years. This assumption is based on historic use of this resource, and current trends towards improved management of surface resources which include soils, vegetation, and water resources.

d. Water Resources

Additional water development will occur in the Delta area. It is anticipated that the DMAD water companies will be able to devise methods to bring their eight deep wells into full production to provide supplemental irrigation water for this service area.

The Central Utah Canal Company will probably continue service as present. The Bureau of Reclamation has plans for delivering 15,300 acre-feet of water annually to the area as part of the Central Utah Project. Deliveries are contingent upon completion of all phases of a complex project and are not expected to occur until the 1990s.

e. Vegetation

Little change in vegetation is expected in the regional setting, as well as at the project area.

f. Animal Life

It is expected that the human population in the Millard-Juab County area will increase at a rate of 2.14 percent per year. This increase, although not as rapid as with the proposal, will place increased demands on the wildlife resources of the region. In addition, an expanding population of humans along the Wasatch Front will continue to place added demands on the wildlife within the region.

As a result of increased hunting, fishing, and other recreational pursuits, wildlife populations within the area could decrease slightly within the next 35 years. Populations of game animals (fish, upland game, waterfowl, and deer) could decline initially. This would bring more pressure on UDWR to provide for an improved hunting experience.

Continued urban expansion and population increase at Cedar City and St. George will alter wildlife habitat. Further development at Cedar City will infringe upon the habitat of the endangered Utah prairie dog. Development at St. George will destroy some habitat for the gila monster and the desert tortoise. The environment along other portions of the transmission lines will remain essentially unchanged.

g. Cultural Resources

Cultural resources will continue to be subject to vandalism and weathering and will face the inevitable loss due to these factors. Vandalism to the resource will increase along with rising recreational use of the area.

h. Recreation and Aesthetics

As population grows within the region, and as completion of highways I-15 and I-70 reduces travel time and improves access to the region, recreational demands will increase. The greatest increases will probably be in hunting, fishing, and off-road vehicle activities. Increased demand could result in some loss of hunter and fisherman success and satisfaction. Establishment of any wilderness areas within the region would increase primitive, unconfined types of recreation such as hiking and horseback riding.

It is anticipated that as limited funds permit, government agencies will provide additional recreational developments to meet growing outdoor recreation pressures.

Some degradation of the visual resource is expected to occur within the regional setting from oil, gas, and geothermal exploration and development, mining, grazing, recreational development, and an anticipated increase in ORV activity. However, much of the region will likely retain its open space scenic values.

i. Land Uses

Land uses within Millard County would remain basically unchanged, without the project, with agriculture dominating the use of land. The DMAD Companies are not presently using their full supplemental rights to ground water, but are in the process of developing that use. The full development would allow the companies to increase their irrigated land and to help alleviate dry year shortages. The amount of increase would be based on many management factors but could be as high as 7,000 acres.

Several agricultural areas along the transmission line would continue to see additional urbanization. These areas occur primarily in the vicinity of Cedar City, Utah.

The BLM wilderness review and USFS RARE II studies may result in Congress designating wilderness areas within the region.

j. Human Resources

Data showing the expected growth without the proposal for selected components is presented in Table 8.2-32 for the years 1982, 1986, and 1990.

Although the Millard and Juab County area is expected to continue its present growth trend, it would be at a much lower rate than if IPP were built at the Lynndyl site.

of the National Park Service to protect the scenic values of their Class I areas from any visual impairment of human levels of perception which is adverse (memo from Director, NPS, to Mr. Davis Hawkins, EPA, April 5, 1978).

i. Construction Activities and Increased Population

Construction activities would result in a temporary increase in particulates around the alternative IPP plant site. Fugitive dust or nonpint source particulates would be generated from dirt roads, earth moving, aggregate storage piles, and other surface disturbances (EPA, 1974a). Particulates from these sources are not under state and federal standards and it is difficult to quantify the impact of these short-term emissions.

A long-term increase in SO_2, particulates, and NO_2 from population increase in the plant area could be expected. The resulting concentrations generated by transportation, solid waste disposal, and commercial fuel consumption are expected to be only slightly higher than the current background levels. The particulate and NO_2 concentrations due to these low-level urban emissions have been estimated, for other power projects, to exceed the concentrations resulting from power plant emission (EPA, 1977c).

3. Topography, Geology, Mineral Resources, and Paleontology

a. Regional Setting

Fossil hunting and collection activities could have adverse impacts on paleontological resources within western Utah. Some important and useful fossils, both vertebrate and invertebrate, could be lost to the scientific community. The extent of this impact cannot be quantified.

b. Project Area

Topography would be altered by cut and fill operations on the 4,640 acre proposed plant site, 122 acre proposed railroad right-of-way (see Figure 8.2-B), and 200 acres (1.2 million cu. yds.) of aggregate borrow sites.

Scientifically valuable vertebrate fossils are located within project area (Miller and Webb, 1978) however, the abundance of these fossils was not indicated in the literature search conducted for the project area. The extent of the impact to any of these fossils cannot be quantified.

c. Power Transmission Systems

Construction and maintenance activities associated with the transmission lines could damage or destroy paleontological materials. Figures 8.2-B through 8.2-G show the approximate locations of the important paleontological study areas. The extent of this impact cannot be quantified.

The planned transmission line routes should not interfere with either geothermal or coal energy resource development (Dames and Moore, 1978).

The probability of land use conflicts between commercial mineral extration and construction and operation of power transmission lines is low (Dames and Moore, 1978).

One significant area is the Pioche Mining District, Nevada where intense exploration and some production are currently underway. Because the Lynndyl to Highland Junction route segment west of Pioche, Nevada is contiguous to an existing powerline, it is not anticipated that conflicts with mining would occur.

Surface water supply to the irrigated lands in the DMAD service area would be reduced by an average of about 9 percent. Seepage and drainage flows from irrigated lands into the adjacent wetlands would be reduced as a result.

Diversions into the Central Utah Canal would be reduced by 56 percent and all deliveries to northern Pavant Valley would be discontinued via the canal. The Fool Creek Reservoirs would also be removed from service during average water supply conditions. In abnormally high water supply years, water may be diverted to these reservoirs in an effort to prevent drainage into the Sevier Lake.

(3) Ground Water

Ground water would be impacted by: 1) reduction in seepage losses from affected canals, reservoirs, and irrigated lands; (2) increased pumping of the DMAD wells; and (3) changing well location by transfer of water rights.

Seepage and Discharge

It is assumed that most of the Fool Creek Reservoirs seepage, an estimated 3,500 acre-feet annually, is presently consumed by natural vegetation. Losses from the Central Utah Canal, about 7,700 acre-feet annually, are mostly consumed in the same manner. It is possible, however, that Clear Lake Springs, seeps west of Greenwood, and the Mud Lake Springs west of McCornick are receiving some flow from Central Utah Canal seepage, Clear Lake Springs may receive an estimated 650 acre-feet of ground water per year from Central Utah Canal seepage. This could represent a 4 percent reduction in spring discharge. Seeps west of Greenwood might be reduced by 1,700 acre-feet a year and Mud Lake Springs by 750 acre-feet. Since these springs are not measured, the relative reduction is not known.

Seepage in the DMAD service area, conveyed to the extensive open drain system and then to the surrounding wetlands and playas, would be approximately 2,100 acre-feet per year, a 9 percent decrease from present levels.

DMAD Wells

The increase in pumping is assumed to be 13,900 acre-feet from the eight DMAD wells. Thus, the total amount of water pumped from these wells would be about 28,100 acre-feet per year. This latter quantity includes 5,600 acre-feet per year for IPP. There would be a slight acceleration of the present trend of declining ground water level in the immediate vicinity of these wells.

Purchased Wells

Under scenario number 1, it is assumed that farmers would discontinue pumping 5,500 acre-feet of water in the DMAD area after their water rights were transferred to IPP. A general reduction of the ground water overdraft would occur in the DMAD area. Irrigated land, 1,800 acres, would be idled and the resulting irrigation return flows to area drains discontinued.

Under scenario number 2, it is assumed that 5,500 acre-feet of ground water now pumped by farmers in the Lynndyl-Leamington area would be discontinued. A general reduction would be experienced in the present local overdraft. Irrigated lands would be reduced by 1,600 acres and irrigation return flows to the Sevier River would be discontinued.

(4) Water Quality

Surface Water

Water quality would be improved in the Sevier River during the winter months between the present Central Utah Canal diversion point and the DMAD Reservoir. This would result from the diluting of irrigation flows with higher quality river flows and from increased pumping of the high quality DMAD well water. Figure 8.3-5 shows the anticipated dissolved solids concentrations at the sampling point near Lynndyl. DMAD Reservoir water would also improve and would tend to be the same as the river flow since IPP deliveries would increase the through-flow within the reservoir. Gunnison Bend Reservoir water quality would be improved because it receives its water from DMAD reservoir. These changes could improve both aquatic habitat and water diverted for irrigation of farmlands and pasture. Improved water quality could reduce leaching requirements and improve crop yield.

Ground Water Regime

IPP would not create adverse impacts on ground water quality. Assuming increased pumping of the eight DMAD wells, 13,900 acre-feet each year above present average levels, there would be a slight acceleration of the present trend of declining water quality.

b. Project Area

The four new wells at the project site would be used in a reserve capacity and may or may not be pumped during an average year. Pumping a maximum of 5,500 acre-feet of water per year would begin to create a new cone of depression in the immediate vicinity of the wells and may alter ground water hydraulic gradients which would cause a slight shift in ground water movement.

c. Power Transmission Systems

During construction, some increase in surface water runoff and sediment yield could be expected due to establishment of impermeable surfaces (e.g., access roads) which concentrate rain fall. None of these effects, however, would be expected to extend farther than a few hundred feet from the point of origin. The effect would be limited to the construction period and reduced as the disturbed areas were revegetated.

6. Vegetation

a. Regional Setting

Wetland vegetation would be influenced by an estimated 9 percent reduction in surface water. The abandonment of Fool Creek Reservoirs and about 50 miles of the Central Utah Canal would affect wetland vegetation. The extent of the effects are, for the most part, unknown. Where water is permanently removed, however, aquatic and emergent vegetation would be eliminated. Where water is reduced below present levels, it is expected that water-dependent plant species would be affected, perhaps giving way to species more typical of dry environments. Unless water were returned to present levels, effects upon vegetation would be permanent.

According to Welsh, 1978, no threatened or endangered plant species are associated with wetland (alkali sink, aquatic or marsh) vegetation in this area.

b. Project Area

Vegetation on approximately 367 surface acres would be temporarily disturbed during construction and 2,239 acres would be occupied for the life of the project. No plant species listed or proposed as endangered or threatened were found within the project area and none were cited in literature reviewed (Welch, 1978).

c. Power Transmission Systems

A total of approximately 2,803 acres would be disturbed during the construction of the Lynndyl portion of the transmission systems. One hundred and fourteen acres would remain occupied.

7. ANIMAL LIFE

a. Regional Setting

(1) Terrestrial Wildlife

It is estimated that surface water diversion would reduce return irrigation water flow to Topaz Slough and incidental wetlands by 9 percent. Reduction in flow would reduce the amount of wetland habitat and, consequently, the production of resident waterfowl and marsh associated birds. Migratory waterfowl, using these areas for resting and feeding, would also be affected. Because amount of habitat reduction cannot be predicted with available information, population reductions cannot be accurately assessed.

A potential reduction in flow to Mud Springs, seeps west of Greenwood and Clear Lake Springs as a result of surface water diversion could have a detrimental effect on waterfowl and other marsh associated wildlife, especially in low water years. The extent of these effects are unknown.

Abandonment of the Fool Creek Reservoirs would displace migratory waterfowl and marsh associated birds, and their hunting opportunities. About 2,000 migrant waterfowl and an unknown number of marsh associated birds, would be displaced except during extremely wet cycles when the Sevier River would be diverted into the reservoirs. The amount of hunting lost is unquantifible.

Retirement of 7,250 to 7,760 acres of irrigated farm land in eastern Millard County could decrease or improve pheasant habitat dependent upon the location of these lands in relation to the remaining croplands and the management of the retired lands. Approximately 8 percent of pheasants in Millard County and their annual production of young pheasants could be lost if abandoned farm lands were fully grazed by domestic livestock or vegetative cover removed by other means. If native vegetation were allowed to re-invade these farm lands and cover not fully harvested, impacts to ring-necked pheasants would be reduced.

People attracted to Millard-Juab Counties, Utah by the project would increase the numbers of sportsmen hunting wildlife. It is estimated, for example, that 4,310 additional people would be living in the Delta-Lynndyl area during 1987, if the power plant were under construction. Adjacent towns would also contribute new hunters to central Utah.

While the State of Utah limits the harvest of anterless deer and elk, an unlimited number of hunting permits are available for cougar, bear, bull elk and buck deer. According to Shields (1976) most deer herds in Utah are hunted to capacity. Rather than allow big game herds and populations of other animals to decrease, harvest would be restricted.

The increase in upland game harvested each year cannot be determined, however, the effects on bird populations are expected to be low.

More intensive waterfowl hunting pressure would occur at Clear Lake Waterfowl Management Area, lower Sevier River, DMAD Reservoir, small sinks south and west of Delta, Utah including Swan, Crafts Lake, Topaz Slough, and the Fish Spring National Wildlife Refuge. The influence of increased regional hunting on migratory waterfowl cannot be predicted, but resident waterfowl populations could decline.

Additional people in the region could also result in increased harassment and poaching of all species of wildlife, including the endangered peregrine falcon and bald eagle. Such incidental losses are not expected to adversely modify the critical habitat of these species. The impacts on the population of bald eagles would not be severe enough to jeopardize their continued existence. Only five peregrine falcon eyries are known to exist in Utah (Gill, 1979) thus loss of even one peregrine falcon might consitute jeopardy to the Utah population.

(2) Aquatic Wildlife

During the peak period of power plant construction in 1987, it is estimated that an additional 56,000 fish could be needed for recreationists to experience the 1973 quality of fishing in Central Utah (Hudson and Thayn, 1977 and Bangerter, 1973). During the operational period of the power project, an additional 22,000 fish could be needed to provide the same quality of fishing. These additional fish requirements constitute less than 1 percent of the annual fish yield for Utah fish hatcheries (UDWR, 1979).

It is the policy of the Utah Division of Wildlife Resources to attempt to stock fish in adaptable waters to meet the demand for sport fishing. Fish hatcheries within the State of Utah are currently producing fish at their full capacity (DWR, 1979). According to the UDWR, the demand for an additional 56,000 fish is very significant, both cost-wise and in terms of added burden on the state's hatchery program. Since sportsmen would be reluctant to accept decreased fishing success on an individual basis, pressure would be on UDWR to rear and stock more fish. This increased demand could not be satisfied by revenues from related increased license sales. Changing fish stocking priorities would not resolve this problem. Therefore, fish planting priorities must be changed if new demands on specific fishing water develops.

Increased fishing pressures would be applied mainly to Oak and Corn Creeks, Minersville Reservoir, small streams, and lakes on the Tushar Mountains within Central Utah. Rainbow, brook, lake, and cutthroat trout numbers would decline without supplemental plants from fish hatcheries. In addition, the average age and size of fish in these waters would decrease through increased harvest.

b. Project Area

(1) Terrestrial Wildlife

About 2,170 acres of non-critical wildlife habitat would be occupied at the plant site. This could affect small mammals, reptiles, and amphibians.

Removal of 1.2 million tons of borrow materials from 200 acres for construction would temporarily denude the borrow areas of vegetation. Revegetation could take up to five years. Maximum forage lost until vegetation is fully re-established could equal amounts needed to feed 15 deer for one month

as from the town of Enterprise, Utah. It would be routed through the scenic, sensitive Mountain Meadow area (milepost 162-179 Figure 8.2-B) and would degrade aesthetic values (high contrast). The Lynndyl to Highland Junction line would cross Utah's West Desert, an undeveloped area having open space value (milepost 55-130, Figure 8.2-C). The Lynndyl to Toquop Junction line would cross through Utah's Black Rock and Escalante Desert, undeveloped areas having open space values (milepost 25-80). The California transmission system would be visible from 11 adjacent recreation attractions or areas of high scenic quality. Contrast would be low as viewed from 10 areas except the Pine Valley Mountains (milepost 162-179, Figure 8.2-B), Coyote Hills, Fossil Mountain and the marked segment of the Dominguez-Escalante Trail, where contrast would be high.

The California System would be visible from portions of three areas with potential for wilderness designation:

Area	Anticipated Contrast
King Top (WSA UT-058070)	High
Fortification Range (WSA NV-040-177)	Low
Wah Wah Mountains (WSA UT-050-073)	Low

The Utah System would parallel existing lines and would be less likely to add significant visual impact. The Utah Transmission System would cross 11 highways in areas of low quality scenery. Table 8.3-8 shows numbers of travelers that would view the transmission lines daily, and the anticipated contrast rating at each crossing. Near the plant site, both Utah lines would parallel Highway 272 (milepost 0-10 Figures 8.2-D, E, and F), visible to travelers in 200 vehicles daily. The Lynndyl to Gonder line would be routed through two scenic, sensitive areas, Marjum Canyon (milepost 25-35 Figure 8.2-E, and the Wheeler Peak foothills (milepost 45-50). The Sigurd to Paragonah line would be routed through one scenic, sensitive area (the Tushar Mountain foothills milepost 100-110, Figure 8.2-F). In all areas aesthetic values would be somewhat reduced (medium contrast) although the areas have already been disturbed. The Utah Transmission System would be visible from 8 adjacent recreation attractions or areas of high quality (Class A) scenery. Additional contrast would be low as viewed from all areas except Weaver Creek Scenic Area (milepost 104-105, Figure 8.2-E) where the additional contrast would be medium. The Utah Transmission System would be visible from portions of eight areas with potential for wilderness designation as follows:

Area	Anticipated Contrast
Mt. Moriah (RARE II 4-332)	Low
Wheeler Peak (RARE II 4-359)	Low
Howell Peak (WSA UT-050-007)	Medium
Notch Peak (WSA UT-050-078)	Low
Roadless Unit NV-040-100	Medium
Swamp Cedar (ISA NV-040-089)	Medium
Pygmy Sage (ISA NV-040-099)	Low
Conger Mountain (WSA UT-050-035)	Low

c. Microwave Communication System

Aesthetics

The addition of a building and tower at the Big Mountain Microwave Communication Station would make the site more obvious to residents of Enterprise and to travelers on Highway U-18.

10. Land Uses

Project Area

The proposed sale of 4,640 acres of public land for the plant site would reduce federal ownership in Millard County by about 0.14 percent. For the duration of the project, the only environmental impact tied directly to sale of the land (as opposed to granting a right-of-way) would relate to the increase in the local property tax base. According to the applicant, the principle reason for requesting purchase is to obtain financial security for borrowing funds to construct the project (personal cmmunication, Campbell, 1978).

With a sale, the federal government would relinquish control of land uses which could occur in the long-term should the plant be abandoned or removed; however local county zoning would apply.

With respect to the sale criteria stated in FLPMA, the proposed 4,640 acre sale tract is:

1. Not difficult or uneconomic to manage, and is not suitable for management by another federal agency, or

2. Not (previously) acquired for a specific purpose, or

3. Of potential value for serving important public objectives, including but not limited to expansion of communities and economic development. The environmental impact analysis in this statement does not determine whether or not such objectives can better be served on other than public land or by maintaining the plant site in federal ownership.

Regional Setting

The IPP caused population would likely acquire property within the 10 incorporated communities in Millard and Juab counties. There is sufficient private land available within those municipalities for the expected residential and commercial expansion without causing changes in established land uses.

Changes in land use would, however, be caused by the transfer of an annual maximum of 44,700 acre-feet of irrigation water from agricultural use to industrial use. Under the two scenarios developed (see Water Resources), 7,250 to 7,760 acres of agricultural land could be removed from production as shown on Table 8.3-9. The resultant loss of annual crop production is shown on Table 8.3-10 and would probably extend beyond the lifetime of the project. As compared to 1977 Utah harvest figures, the annual loss in crop production would be equivalent

of up to 1 percent of the state's alfalfa production, 41 percent of the state's alfalfa seed, 3 percent of the state's grains, and 2 percent of the corn and potato production in Utah (Utah Department of Agriculture, 1978).

The 18 areas with potential for wilderness designation (as listed on Table 8.2-15 and shown on Figure 8.2-19) may receive additional ORV and other visitor use, resulting in degradation of values for which they are being protected.

Power Transmission Systems

Where the California Transmission System would be routed within WSA UT-050-070, King Top, (1/2 mile within area for four miles), wilderness character (i.e. naturalness) and wilderness suitability would be impaired adjacent to the line. Where the Utah Transmission System would be routed within uninventoried BLM roadless unit NV-040-100, (200 feet within unit for 3 miles) any wilderness character would be impaired adjacent to the line.

Any impairment of wilderness suitability cannot be allowed prior to completion of BLM's wilderness review and congressional decision on areas having wilderness character. Wilderness suitability could not be affected in any areas having potential for wilderness designation identified along the transmission system.

11. Land Use Plans and Controls

a. Coordination With Existing Land Use Plans

Planning for federal land use has been done by both the Forest Service and the Bureau of Land Management for lands which would be affected by the generating facilities and the transmission lines. This planning has been done over about a 20-year period and is continuing; therefore, the numerous planning units involved have plans in varied status. Some plans are newly revised and include consideration of the IPP proposal; however, the majority of plans were prepared prior to the proposal and did not consider it. Both Forest Service and BLM planning systems allow for consideration of new proposals.

The proposed plant site and transmission corridors were compared with the existing planning documents and all significant conflicts have been covered in appropriate sections of this statement. Power transmission line conflicts are highlighted in Table 3-9.

Alternatives are presented in this environmental statement which would avoid conflicts for some planning units; however, other plan would require revision in order for the conflicts to be resolved. Any revisions would be made following agency regulations, procedures, and policies. For BLM (inasmuch as new planning regulations have not been finalized) a policy would be followed which would utilize the environmental statement process as a mechanism for considering planning recommendations and trade-offs. An approval of the proposal and/or alternatives analyzed in the environmental statement shall also be a decision to amend the plan (or plans if more than one is involved).

b. Regional Setting

The Master Plan of Land Use for Millard County is silent on the matter of industrial growth outside of existing cities. Millard County has expressed a desire to prevent uncontrolled "boom town" growth in the Delta -Lynndyl area (Church, 1978).

Company needs as well as other companies needing rights-of-way. The applicant (IPP) is proposing to use this route from Twin Buttes to Nevada-Utah Stateline (mileposts 44-90.)

e. Transportation System

The transportation facilities are not in conflict with any existing land use plan.

12. Human Resources

Population

Table 8.3-11 summarizes population impacts of IPP by area. Millard County populations at the 1987 peak is estimated to reach 15,440. Thirty-two percent of this population would result from IPP. The Delta -Lynndyl area's projected population in 1987 is 10,700, of which 4,310 or 40 percent would be IPP related.

IPP's operational phase (from 1990 on) would add a total of 2,250 permanent residents to Millard and Juab counties (11 percent of the total population). One thousand nine hundred fifty persons are expected to be added to Millard County (18 percent) and 300 persons are expected to be added to Juab County (3 percent). Seventy-seven percent of the total additional IPP related population increase after 1990, (1,740 persons) would reside in the Delta-Lynndyl area.

Population in the Delta-Lynndyl area would decline by an estimated 20 percent from 1987 to 1990, with Millard County losing about 15.5 percent, and Juab increasing by 3.3 percent.

Employment

Table 8.3-12 shows direct and indirect IPP related employment in the Millard and Juab County area. At the peak of the construction period in 1986, IPP would increase total employment in Millard and Juab counties by 3,340 jobs or 38 percent overall. Long-term employment is shown by statistics given for 1990, the first year that the plant's full complement of operation and maintenance personnel would be on hand and when the construction workforce would have departed. The 1990 project related direct and secondary employment would be 14 percent of the total employment for the two counties.

IPP also would bring about shifts in the distribution of Millard County employment. Higher paying construction employment would temporarily be Millard County's largest employment sector. The historical predominance of lower paying agriculture employment would be permanently changed. The 630 permanent jobs added to the manufacturing sector by IPP's operation and maintenance force would raise the manufacturing sector from the fifth largest employment sector to the county's largest. The commercial trade and government sectors

are higher paying and would surpass agriculture employment as population growth increases local demand for goods and services and as the change in water use reduces land under cultivation.

Job opportunities would bring about in-migration of job seekers from outside the area, especially during IPP construction. This may continue to attract in-migration after the available jobs have been filled and/or after the peak of construction when employment opportunities begin to decline. In either case, the labor force could continue to expand in the absence of sufficient numbers of jobs, causing the unemployment rate to meet or exceed its pre-project level. Out-migration would probably follow the decline in employment opportunities.

Income

Table 8.3-13 shows projected personal income and per capita income for Millard and Juab counties.

IPP would contribute $29 million to the personal income of Millard County residents in 1986--39 percent of total personal income in the county. Juab County would gain $4.9 million in personal income in 1986--20 percent of its total personal income. The operation and maintenance phase of the project in years 1990 and beyond would add approximately 13 percent and 6 percent to personal income in Millard and Juab Counties respectively.

In 1986, the project would increase Millard County per capita income, shown on Table 8.3-14 by $1,057 or 24 percent and Juab County per capita income by $328 or 8 percent. During the operational phase, the plant is expected to add $40 (0.9 percent) and $17 (0.4 percent) to the Millard and Juab County figures respectively.

Agricultural Earnings

The conversion of water use to industrial use would reduce agricultural earnings approximately as shown on Tables 8.3-15 through 8.3-18. The total net loss of agricultural income under Scenario 1 would be about $778,000.00 or 5 percent the areas gross agricultural income of $14,161,000.00. The total net loss of agricultural income under Scenario 2 would be $981,000.00 or 7 percent of the areas gross agricultural income.

The power generating station and spur railroad would be fenced to exclude domestic livestock. Forage losses to livestock because of this action are estimated to be 215 animal unit months annually. Replacement feed costs are estimated to be about $4,500 per year. These monetary losses would be shared by six permittees who graze livestock within this allotment

Infrastructures

At the time of this writing, there is still no firm arrangements for insuring that the required front-end money would be available to provide infrastructural needs. In a letter to the BLM, dated 9/7/79, IPP has stated its position regarding provision of community services and "front-end" money as follows: (See Utah Memorandum included with Letter 8 Response 3)

1. IPP is committed to the intent of Utah Code Annotated, Section 11-13-25, which requires IPP to make annual payments to the local entities for the purpose of providing funds for the operation and maintenance of community services.

2. It is still the intention of IPP to pay sales and use taxes, with the expectation that such funds would be used to finance infrastructural needs.

3. IPP is willing to provide financial aid, in advance, for the construction of the infrastructural needs due to the project in exchange for a credit to its sales and use tax obligation or its payment of in lieu ad valorem taxes.

4. For those services that cannot be provided by the above methods, IPP will assist the local communities in identifying and obtaining existing or new federal or state financial assistance programs to minimize the socioeconomic impacts."

The State of Utah Department of Community and Economic Development has also sent a letter which describes some potential means to obtain needed revenues, but also notes the following list of legal obstacles:

1. State law has no provision for collecting property taxes during the construction of a power plant. Impacts from the plant will affect Millard and adjoining counties approximately 6 years before ad valorem property taxes can be collected.

2. The Utah State Legislature passed enabling legislation permitting Millard County to levy an "in lieu, ad valorem" tax on IPP to take care of local impacts. A question has arisen of whether this tax is constitutional under the Commerce Clause of the US Constitution and under Federal Statute 15 - U.S. Code - Section 391, which prohibits states or political subdivisions from imposing a discriminatory tax on the interstate transmission of electricity. Of the electricity generated by IPP, 11 percent will go to Utah municipalities and is exempt. Thirty-two percent of the power will be sold to Utah Power and Light and the Rural Electrification Administration and will be taxable, and 52 percent will be sold to California municipalities. The 52 percent bought by California cities may or may not be taxable.

3. The physical assets of the Intermountain Power Project are owned by tax exempt entities in Utah. The condition casts doubt on whether local jurisdictions or the state can collect taxes on the plant itself.

4. Even if in lieu, ad valorem taxes are collected on IPP, revenues will accrue to Millard County but not to surrounding municipalities or Juab County where impacts will also occur.

These problems have been referred to the State Tax Revision Commission for study and development of solutions.

It should be noted that before real sources of needed revenues can be identified, existing Utah laws will have to be changed or new laws passed.

If a timely source of funds should not develop, some, or all of the additional services required would not be available. This would mean the existing facilities would be severely overtaxed resulting in serious short-

ages and loss of quality in the services provided. These services would include water, sewer, solid waste, schools, police, fire, public health, and roads.

It could be expected that these negative impacts would last for an undetermined period of time, until means are developed to provide the funds required to bring the impacted facilities up to appropriate standards.

The project construction phase creates service demands, which are greater than those of the operation and maintenance phase. Some projects for service delivery (e.g., water, sewer, and solid waste disposal) could be built to meet demands associated with the construction peak; doing so would leave excess capacity for a long-term growth.

Because the construction force would be larger than the permanent force, determination of the proper size of facilities would be a complex problem. Attention should be paid to ensure an equitable distribution of capital project benefits and costs.

Use of temporary housing would be unavoidable during the construction period. Greater demand would also force more intensive use of existing facilities (e.g., sending children to school in shifts), and greater use of temporary facilities. Local residents and government representatives should expect some problems because of the difficulty involved in meeting short term demands coupled with lack of experience in dealing with such problems.

Municipal Water--Treatment and Distribution

Water Supply

A comparison of the population that could be supported by existing municipal water rights with the projected IPP related population shows that ample water rights are available to absorb growth caused by IPP. It is assumed that this water is available and would come from ground water sources.

Water Treatment and Storage

The projected IPP population would exceed the design capacity of the water system by approximately 830 dwelling units. Therefore, the Delta-Lynndyl area would require an additional 132 MCD water storage and delivery systems to comply with State Health Department standards.

Water Storage (After Treatment)

It is estimated that IPP-related population growth would require an additional 1.32 million gallons of municipal water supply storage capacity in the Delta-Lynndyl area by 1986 to remain in compliance with State Health Department standards.

Sewage

Table 8.3-19 compares IPP-related population growth with projected excess sewage system capacity in each area. Negative numbers indicate that new capacity would have to be developed in the systems to adequately service population growth. Nephi and Fillmore area municipalities could absorb the anticipated growth.

It has been assumed that all population growth would occur within existing municipal boundaries in order to show a "worst case" condition. Were this to happen, waste water treatment capacity would need to be expanded by 44 percent or 2,800 new hookups in the Delta-Lynndyl area and by 75 percent or 210 new hookups in the Eureka area to service peak year population. In the two areas, however, growth serviced by septic tanks could occur outside municipalities diminishing or eliminating impacts on municipal sewage treatment facilities.

Solid Waste

According to the Utah Department of Social Services, Division of Solid Waste Management, all open dumps will have to be closed when the State begins enforcing the U.S. Resource Conservation and Recovery Act within three to five years. This act requires all solid waste disposal facilities to meet sanitary landfill requirements. Since all solid waste disposal facilities in Millard and Juab counties are open dumps, present sites will either have to be converted to sanitary landfills or new space acquired for new facilities. The need for these changes will occur regardless of the demand on solid waste facilities created by IPP.

Education

The effects of the IPP-related students on school facilities in the four impact areas are summarized on Table 8.3-20. IPP would add to an over crowded classroom problem that will already exist by 1982. The schools' present capacity would be exceeded by 1,255 students and 5 teachers in 1987 and 702 of those students (56 percent) would be attributable to IPP. The 1990 projection of 321 students and 14 teachers indicate the level of long-term effects of IPP on grades K-7.

In the Delta-Lynndyl area, IPP-related students would start to exceed secondary school absorption capacity in 1986. The IPP student population would peak in 1987 at 438 students and 19 teachers would be needed. Long-term IPP-related students are expected to level out at approximately 200.

In the Nephi area, by 1986, 91 students and 4 teachers, (approximately 21 percent) of the K-6 students exceeding capacity would be IPP-related. Likewise, in the Fillmore area, IPP would add a maximum of 95 and 81 students plus 8 teachers to already over capacity situations in grades K-6 and 7-12, respectively. At peak population in 1987, there would be about 4,820 students in the school system.

Law Enforcement

In the Delta-Lynndyl area, IPP related population is expected to create a need for a maximum of eight additional law enforcement officers during the peak construction period, but only three additional officers during the post 1990 operation phase of the project. A maximum project related need for one additional officer is anticipated in the Nephi and Fillmore areas. Additional needs are based on the standard of 1.9 officers per thousand as recommended by the Six-County Commissioners Organization.

As standards for jail facilities based on populations are not available and due to the present questionable status of the Millard County jail, specific projections of future needs are not practicle. However, it is likely that Millard County would have to provide more viable detention facilities, probably in the Delta area, if the project is built at Lynndyl.

Fire Protection

By 1987, the Delta-Lynndyl area would need an additional pumper rated at 500 gallons per minute (g.p.m.) and the Nephi area would also need an additional 250 g.p.m. pumper.

Public Health

Hospitals

As shown in Table 8.3-21, the Delta-Lynndyl area's West Millard Hospital would be near capacity at the peak year of IPP's construction. However, some of the 18 existing long-term care beds could be used to meet the temporary peak demand.

The Nephi area's Juab County Hospital and the Fillmore Hospital would be able to absorb the peak year demand without exceeding the optimal capacities of the present facilities.

Professional Personnel

The Delta-Lynndyl area is the only area which would require additional medical personel. The peak year requirements, attributable to IPP, would be two physicians, three registered nurses, one licensed practical nurse, and one mental health worker in addition to the present number in the area. IPP-related permanent population from 1990 through the plant's operation phase would require one physician, one registered nurse, and one mental health worker to maintain current personnel to population ratios for rural areas of Utah.

Housing

At peak housing demand, approximately 2,210 permanent and temporary housing units would be needed to serve the IPP related population. Four hundred sixty of these units would be permanent and the remaining 1,750 would be temporary units such as campers, trailers, and man-camp units which would be removed as they become surplus. Table 8.3-22 shows housing needs.

IPP would be willing to participate in the provision of construction worker quarters for up to 300 plant construction workers. Such a facility would house construction workers in temporary quarters, and would have provisions for meals and leisure-time activities.

E. MITIGATING MEASURES NOT INCLUDED IN THE PROPOSED ACTION

1. Introduction

Company proposed design features and government agencies' standard requirements are discussed in Chapter 1 of Volumne I. Mitigating measures unique to the Lynndyl Alternative are discussed in this section. Measures are included only if they are feasible, committed, and enforceable by government agencies and would be implemented because of existing laws, court decisions, or agency policy.

2. Measures Unique to This Action and Required of the Applicant by Federal Agencies

Authority for requiring the following mitigating actions is granted under the same authority as described in Chapter 1 for standard requirements.

If the proposed project were approved, the applicant would be required to carry out the following on Bureau of Land Management (BLM), U.S. Forest Service (USFS), and Bureau of Reclamation (USBR) administered lands:

a. Blasting and other surface disturbances would be prohibited within 500 feet of all live springs, reservoirs or water wells.

b. During critical periods, transmission line construction would cease in elk, deer, sage grouse, desert tortoise, and bald eagle habitat along the transmission lines. Table 8.4-1 lists habitat areas and critical periods.

c. Following the advice of a qualified wildlife biologist as designated by the appropriate federal official, roads, railroads, towers, and other ground disturbing activities would be located 200 yards from identified active dens, burrows, nests, or roosting sites to protect the species listed in Table 8.4-2.

d. Use helicopters or hand methods to construct pads, to erect towers and string conductors, in areas designated by the appropriate federal official, where access across the terrain or management constraints preclude standard construction methods.

e. The applicant would prepare photographic simulations of areas in which facilities are proposed within foreground-middleground areas of high scenic value or high sensitivity. Using the simulation as a guide, the applicant would design and locate structures to blend into the existing environment. Affected government agencies would evaluate and approve measures before construction is begun.

f. Transmission lines would be maintained and repaired using the same techniques as were used in original construction.

g. Prior to project approval, contemporary ethinic groups which may have special concerns for cultural resources in either proposed or alternative power transmission corridors would be consulted in order to identify sites or areas of special reli-

Topography, Geology, Mineral Resources, and Paleontology

Topography on 200 acres would be altered by the removal of 1.2 million cubic yards of borrow materials.

Fossil hunting and collection activities could have adverse impacts on paleontological resources within western Utah. Some important and useful fossils, both vertebrate and invertebrate, could be lost to the scientific community. Construction and maintenance activities associated with the transmission lines could damage or destroy paleontological materials. The extent of this impact cannot be quantified.

The probability of land use conflicts between commercial mineral extraction and construction and operation of power transmission lines are low.

One important area is the Pioche Mining District, Nevada. The Lynndyl to Highland Junction route segment, west of Pioche, is contiguous to an existing power line. It is not anticipated that conflicts with mining would occur by the construction of an additional power line.

Soils

An increase in off-road vehicles (ORV) travel would disturb vegetation on soils having a high potential for wind erosion. The rate of wind erosion would increase. Areas most likely to be impacted are dunes and playas which produce little vegetation. Depending on the sites disturbed, revegetation and soil stabilization could require from 10 to 30 years (SCS, 1978).

Construction activities would disturb soils which are classified as having high susceptibility to wind erosion (SCS, 1977). Erosion would increase as vegetation that serves to stabilize soils would be removed or crushed by construction equipment. The potential for increased erosion would be greatest on the 125 miles of high erosion hazard soils that would be affected by the transmission line systems (see Figures 8.2-B through 8.2-G).

Erosion would be localized on the disturbed areas, and no impacts on other resources would be expected. Complete revegetation and stabilization of sandy soils could take up to 30 years. On other soils along the transmission lines, complete revegetation without seeding could take from 10 to 20 years (SCS, 1978).

Water Resources

Seepage and Discharge

Loss of seepage from the Central Utah Canal could reduce discharge by 650 acre-feet per year at Clear Lake Springs, 1,700 acre-feet at seeps west of Greenwood, and 750 acre-feet at Mud Lake Springs. This would represent a 4 percent reduction of flow at Clear Lake Springs and an unknown reduction at the remaining springs and seeps.

Ground Water

Pumping a maximum of 5,500 acre-feet of water per year in the project area would begin to create a new cone of depression in the immediate vicinity of the wells and may alter ground water hydraulic gradients which would cause a slight shift in ground water movement.

Vegetation

Wetland vegetation would be influenced by an estimated 9 percent reduction in surface water. Also, the abandonment of Fool Creek Reservoirs (about 12 miles northeast of Delta, Utah), and abandonment of about 50 miles of the Central Utah Canal would affect wetland vegetation. The extent of the affects are for the most part unknown. Where water is permanently removed, however, aquatic and emergent vegetation would be eliminated.

Vegetation (Appendix 8.2-4) on 5,409 surface acres would be temporarily disturbed during construction and 2,353 acres would be occupied for the life of the project.

Even with federally required measures, it is possible that some individual threatened or endangered plants could be inadvertantly destroyed. It is not likely that the continued existence of any of the species would be jeopardized.

Animal Life

A 9 percent reduction in water flows to bottomlands and a 4 percent reduction in ground water to springs and seeps, including Clear Lake Spring would reduce the production of resident waterfowl and other marsh associated birds. Migratory waterfowl would also be affected. Abandonment of the Fool Creek Reservoirs would displace in excess of 2,000 migrant waterfowl and an unknown number of marsh associated birds.

The additional people which the project would bring to central Utah would increase the hunting pressure on and harassment of the region's game and non-game species including the endangered peregrine falcon and bald eagle and could reduce animal populations. The degree of decline cannot be accurately predicted.

Rainbow, brook, lake, and cutthroat trout numbers in the region's lakes and streams would decline without supplemental plants from fish hatcheries. In addition, the average age and size of fish in these waters would decrease through greater harvest.

Removal of 1.2 million tons of borrow materials from 200 acres for the construction of the power plant would temporarily denude the borrow areas. Maximum forage lost until vegetation is fully re-established would provide forage for 15 deer for one month each year.

Approximately 2,803 acres of wildlife habitat would be disturbed during power line construction and 114 acres would be permanently occupied by power transmission tower pads and roads. New access roads would encourage more travel by recreationists and others into more remote areas. This increased travel would place additional hunting, poaching, and harassment pressures on wildlife, especially upon mule deer, raptors, and desert tortoise.

It is known (Ellis, et al., 1969) that raptors are often shot when perched on power poles or towers and raptor losses due to indiscriminate shooting would increase. If construction continued during the raptor nesting season, nest abandonment and decrease in hawk production would likely result.

Structures, if constructed in sage grouse concentration areas, would provide perches for raptors and make sage grouse more susceptable to predation. The magnitude of these losses cannot be accurately assessed.

The presence of transmission lines may cause a reduction in the aesthetic quality of the recreation experience for some people visiting the 18 recreation attractions adjacent to the transmission systems.

Aesthetics

The plant's stacks, buildings, and emissions would dominate the landscape as viewed from U.S. Highway 50. The plant would be visibile (low to high contrast) from other surrounding highways, communities, and recreation attraction areas as far as 40 miles distant. It would be considered a landmark of interest to some and an aesthetically degrading intrusion to others.

The transmission lines would cause visually adverse man-made contrast in or near visually sensitive areas such as major travel routes, primary highway crossings, high quality scenic areas, communities, or in areas with recreational values.

Where proposed transmission lines would parallel existing lines, additional contrast would generally not add appreciably to present contrast.

The power transmission systems would cross highways in areas of low quality scenery that would be viewed by passengers in a total of 20,095 vehicles daily. Near the plant site, both California lines would parallel Highway 272 (milepost 0-10, Figures 8.2-B and C) and would be visibile to travelers in 200 vehicles daily. The Lynndyl to Toquop Junction line would parallel Utah Highway 18 (milepost 161-164, Figure 8.2-B) and would be visible (medium contrast) to travelers in 455 vehicles daily, as well as from the town of Enterprise, Utah. The line would also pass through the scenic, sensitive Mountain Meadow area (milepost 162-179, Figure 8.2-B) and would degrade its aesthetic values (high contrast). The Lynndyl to Highland Junction line would cross Utah's West Desert, an undeveloped area having open space value (milepost 55-130, Figure 8.2-C). The Lynndyl to Toquop Junction line would cross through Utah's Black Rock and Escalante Desert, undeveloped areas having open space values (milepost 25-80), parallel Highway 272 (milepost 0-10, Figures 8.2-D, E, and F), visible to travelers in 200 vehicles daily. The Lynndyl to Gonder line would be routed through two scenic, sensitive areas, Marjum Canyon (milepost 25-35, Figure 8.2-E, and the Wheeler Peak foothills (milepost 45-50). The Sigurd to Paragonah line would be routed through one scenic, sensitive area (the Tushar Mountain foothills milepost 100-110, Figure 8.2-F). In all areas aesthetic values would be somewhat reduced (medium contrast) although the areas have already been disturbed.

The transmission systems would be visible from 18 adjacent recreation attractions or areas of high quality (Class A) scenery. Additional contrast would be low as viewed from all areas except Coyote Hills, Fossil Mountain, and the marked section of the Dominquez-Escalante Trail where contrast would be high and Weaver Creek where the additional contrast would be medium. The transmission systems would be visible from portions of 11 areas with potential for wilderness designation as follows:

Area	Anticipated Contrast
Wah Wah Mountains (WSA UT-050-073)	Low
King Top (WSA UT-050-070)	High
Fortification Range (WSA NV-040-177)	Low
Mt. Moriah (RARE II 4-332)	Low
Wheeler Peak (RARE II 4-359)	Low
Howell Peak (WSA UT-050-007)	Medium
Notch Peak (WSA UT-050-078)	Low

Roadless Unit (NV-040-100)	Medium
Swamp Cedar (ISA NV-040-089)	Medium
Pygmy Sage (ISA NV-040-099)	Low
Conger Mountain (WSA UT-050-035)	Low

The addition of a building and tower at the Big Mountain Microwave Communication Station would make the site more obvious to residents of Enterprise and to travelers on Highway U-18.

Land Use

An annual maximum of 44,700 acre-feet of irrigation water would be transferred from agricultural use to industrial use. Under the two scenarios developed for obtaining 5,500 acre-feet of ground water (see Water Resources), 7,250 to 7,760 acres of agricultural land could be removed from production.

There is no planned mitigation to offset this change. Possible delivery of additional water to the Lower Sevier area by the Central Utah Project would be for supplementary purposes only. Croplands idled because the owner has sold his primary water rights to IPP would not be eligible for this water.

The retirement of 7,250 to 7,760 acres would result in the loss of annual crop production for the life of project. As compared to 1977 Utah harvest figures, crop losses would be equivalent to 1 percent of Utah's annual alfalfa production, 41 percent of the alfalfa seed, 3 percent of the grain, and 29 percent of the corn and potato production.

In the regional setting, 18 areas with potential for wilderness designation (as listed on Table 8.2-15 and shown on Figure 8.2-19 may receive additional ORV and other visitor use, resulting in degradation of values for which they are being protected.

Land Use Plans and Controls

The power generating station and support facilities are not compatible with Millard County's Zoning Ordinance Number 78. The area's current designation is Open Range and Forest (RF-1), and a zoning variance would be required for plant construction.

The transmission routes would conflict with various land use plans. Table 8.3-11 summarizes conflicts.

Human Resources

Population

Total population in Millard and Juab Counties at the 1987 peak is estimated to reach 15,440--32 percent of which would result from IPP. IPP's operational phase (from 1990 on) would add a total of 2,250 permanent residents to Millard and Juab counties (11 percent of the total population).

Employment

At the peak of the construction period in 1986, IPP would increase total employment in Millard and Juab counties by 3,340 jobs or 38 percent overall. The 1990 project related direct and secondary employment would be 14 percent of the total employment for the two counties.

IPP also would bring about shifts in the distribution of Millard County employment. Higher paying construction employment would temporarily be Millard County's largest employment sector.

I. ALTERNATIVES

This section identifies alternatives associated with the Lynndyl site and is confined to transmission line routing. The alternatives section of the Salt Wash portion of this statement (Volume I) discusses alternative plant design and operating methods such as alternative cooling systems, particulate control, and transmission line voltages. The same alternatives discussed in Vol. 1, Page 8-1 through 8-7 would also generally apply to the Lynndyl site. Volume III contains a discussion of alternatives to the Intermountain Power Project itself.

1. Alternative Coal Transportation Methods

a. Coal Slurry Pipeline: The Lynndyl proposal is to have coal on an existing mainline railroad with the addition of a newly constructed spur into the plant. The coal source for the subject power plant is currently unknown, as is the location, timing, and design of a slurry pipeline not yet proposed. Therefore, evaluation and analysis in such definitive terms is impossible at this time. Should such a system be proposed, by IPP, it would be evaluated and analyzed to fully comply with NEPA.

A general description of a coal slurry pipeline and its anticipated impacts are contained in Vol. 1, pages 8-5 and 8-7.

b. Coal Conveyor Transport of Coal: Coal conveyors are more often used for short distances, averaging 5 miles and in conjunction with other modes of transportation (University of Oklahoma, 1975).

Although it is technically feasible to build large volume, long-distance conveyors, the reliability of such a system extending from Central Utah coal fields to Lynndyl has not been proven.

c. Truck Transportation of Coal: While transport of the required tonnage of coal by truck is theoretically possible, it actual application would probably have greater environmental impacts than transporting coal by a railroad system. A large fleet of trucks would be needed to transport about 8 million tons of coal each year. This would necessitate designing and rebuilding some segments of road in order to handle extremely heavy use over the more than 150 miles of highway.

2. Alternative Transmission Systems (Lynndyl Plant Site)

Ten alternative segments for the Lynndyl portions of the power transmission systems have been identified.

1. Leamington Canyon (Figure 8.8-1, Table 8.8-1)
2. Escalante Desert (Figure 8.8-3, Table 8.8-2)
3. Connors Pass (Figure 8.8-5, Table 8.8-3)
4. Baking Powder Flat (Figure 8.8-7, Table 8.8-4)
5. Lake Valley--Pioche--
   Dry Lake Junction (Figure 8.8-9, Table 8.8-5)
6. Black Rock (Figure 8.8-11, Table 8.8-6)
7. Lund (Figure 8.8-13, Table 8.8-7)
8. Mountain Meadow (Figure 8.8-15, Table 8.8-8)
9. King Top Wilderness Study
   Area Alternative (Table 8.8-9)
10. Roadless Unit NV-040-100
    Alternative (Table 8.8-10)

TABLE 8.8-2 (continued)

Escalante Desert Alternative Route			Paragonah to St. George Proposed Route		
Highway Crossing	ADT	Contrast Rating	Highway Crossing	ADT	Contrast Rating
U-130	250	High	U-130	250	High
			U-380	290	High
			U-56	650	Low
The transmission line would be visible (medium contrast) from a housing subdivision within Cedar Valley (milepost 7-15).			The transmission line would be a visual intrusion (high contrast) from housing subdivisions in Cedar Valley (mileposts 12-17).		
Powerline would also extend into northern portions of Mountain Meadow, a sensitive area (mileposts 47-52) and parallel existing powerline for 11 miles. Additional intrusion would have little effect on aesthetic values.					

Mitigating Measures

Animal Life

Ground disturbing construction activities, e.g. roads, towers, would be located 200 yards from identified. Utah prairie dog burrows (mileposts 16-21) to mitigate impacts on this species. An appropriate federal official would advise and designate areas of concern on federal lands.

Animal Life

Ground disturbing activities, e.g. roads, towers would be located 200 yards from identified Utah prairie dog burrows (mileposts 0-26) to mitigate impacts on this species. An appropriate federal official would advise and designate areas of concern on federal lands.

Adverse Impacts Which Cannot be Avoided

Paleontology

Due to limitations in salvage techniques, an unquantifiable loss of scientific-educational information would result.

Paleontology

Due to limitations in salvage techniques, an unquantifiable loss of scientific-educational information would result.

TABLE 8.8-8 (continued)

Mountain Meadow Alternative Route			Lynndyl to Toquop Junction Proposed Route		
Highway Crossing	ADT	Anticipated Contrast	Highway Crossing	ADT	Anticipated Contrast
U-18	355	low	U-18	355	Medium
The entire route would cross the visually sensitive Mountain Meadow area. An existing 138-kV powerline already provides an initial intrusion along the route. Additional contrast would vary between (low-high) and aesthetic value would be degraded.			Route would parallel highway U-18 for about 5 miles and would be visible from Enterprise, Utah with medium to high contrast rating. The entire route would cross a visually sensitive area . Man-made contrast would be high and aesthetic values would be lost.		

Mitigating Measures

Animal Life	Animal Life
No issue identified.	The impacts on mule deer fawning on federal lands (milepost 159-167) would be mitigated by ceasing construction of powerlines when designated by the appropriate federal official during period May 15-July 15.
Recreation and Aesthetics	**Recreation and Aesthetics**
Mitigating measures 2.d, e, and f would mitigate aesthetic impacts.	Mitigating measures 2.d, e, and f would mitigate aesthetic impacts.

Adverse Impacts Which Cannot Be Avoided

Paleontology	Paleontology
Due to limitations in slavage techniques, an unquantifiable loss in scientific and educational information would be lost.	Due to limitations in salvage techniques, an unquantifiable loss in scientific and educational information would be lost.

TABLE 8.8-8 (concluded)

Mountain Meadow Alternative Route	Lynndyl to Toquop Junction Proposed Route
Soils	Soils
No issue identified.	Erosion would be localized on the disturbed areas, and no impacts on other resources would be expected. Complete revegetation and stabilization of sandy soils could take up to 30 years. On other soils along the portions of the Lynndyl transmission lines, complete revegetation without seeding could take from 10 to 20 years (SCS, 1978).
Cultural Resources	Cultural Resources
Archaeology: Even with full implementation of proposed mitigating measures, some losses would occur due to vandalism and construction activities.	Archaeology: Even with full implementation of proposed mitigating measures, some losses would occur due to vandalism and construction activities.
Recreation and Aesthetics	Recreation and Aesthetics
One transmission line highway crossing (low contrast) would be visible to travelers in 355 vehicles daily. The route would cross through visually sensitive area, from low to high. Aesthetic values would be degraded.	One highway crossing would be visible (medium contrast) to motorists in 355 vehicles daily. The route would parallel and be visible (medium contrast) from U-18 for about 5 miles and would be visible (medium contrast) from Enterprise, Utah. The entire route would cross a visually sensitive area, man-made contrast would be high, and aesthetic values would be lost.

TABLE 8.8-10

Roadless Unit NV-040-100 Alternative
Comparison of Alternative to Preferred Route
Southern California Transmission System

Roadless Unit NV-040-100 Alternative	Lynndyl to Gonder Proposed Route
Route Description **One 230-kV Transmission Line**	
The alternative would be to cross the power line to the north side of the existing 230 kV line at milepost 105 paralleling and then re-crossing to the south of the existing 230 kV line at milepost 110.	The proposed Lynndyl to Gonder segment would cross 200 feet within uninventoried BLM roadless unit NV-040-100.
Aesthetics	**Aesthetics**
The line would be visible (low contrast) from portions of roadless unit NV-040-100.	The line would be visible (low contrast) from portions of roadless unit NV-040-100.
Land Uses	**Land Uses**
No issue identified.	Any wilderness character (i.e. naturalness) and wilderness suitability the unit may have would be impaired adjacent to the line, and the action could not be allowed prior to completion of the wilderness review, or prior to congressional decision if the area has wilderness character.

ALTERNATIVES TO THE PROPOSED LAND SALE FOR THE GENERATING STATION

Because the Lynndyl Alternative site is located near the outer perimeter of public lands in the Delta-Lynndyl area, the Bureau of Land Management does not anticipate management or use problems on the adjacent public lands.

Surface resource values are low in terms of wildlife habitat; recreational and other current uses of natural resources are not extensive.

One option would be for the department of the interior to grant a right-of-way for the 4,640 acre power plant site (under Title V of FLPMA) rather than the proposed land sale (Under Title II).

Environmental impacts would essentially remain the same under either land sale or the granting of right-of-way. According to a representative of IPP, participants, except Utah municipalities, would pay in lieu of ad valorem taxes based on the value of project improvements. These payments to local government would be based on 89 percent of the value of project improvements because 11 percent of the electrical power generated would be delivered to Utah participating municipalities.

Topography and Paleontology

Topography on 200 acres would be altered by removal of 7.6 million cubic yards of borrow materials.

The Morrison Formation, in which most North American dinosaurs have been found, would be adversely affected by increased recreational use and rockhounding in the region. The power transmission systems would cross 41 miles of geologic formations with potential for high paleontological significance. An unquantifiable loss of scientific-educational information would result.

Soils

Increased off-road vehicle (ORV) travel in the regional setting would disturb vegetation on high wind erosion hazard soils northeast of Hanksville. Construction activities would cause localized erosion on approxmately 5,710 acres within the project area. Approximately 500 miles of moderate to high wind erosion hazard soils would be crossed by the power transmission systems. Increased erosion would be localized on the disturbed areas and no impacts on other resources are expected. Severe erosion and slumping could occur along 4 miles of power transmission system in the Fishlake National Forest in Utah.

Water Resources

Approximately 2 percent (30,000 acre-feet) of Utah's share of Colorado River water would be committed to IPP. Withdrawal of the water from the Fremont River would increase the salinity of the Colorado River at Lee's Ferry by, at most, 0.6 milligrams per liter. This would be an increase of less than 1/10 of 1 percent. From November through March, the Fremont River's flow would be zero below the diversion dam, and 80 percent of the Dirty Devil River's flow would also be eliminated. The natural flow of at least one spring and three seeps are expected to cease and the standing water level in four wells drop for over 50 years beyond the life of the project. Twenty other springs and seeps also occur in the area of potential impact. The quality of the ground water in the Navajo Sandstone aquifer would decrease with pumping by IPP.

Vegetation

Approximately 11,890 acres of vegetation ranging from alpine forest to hot desert and Joshua tree forest would be disturbed. The majority of the disturbance would be in the cold desert type. About 5,650 acres of those disturbed would remain occupied by project components. Up to 240 acres of riparian vegetation could be adversely altered due to diversion of water from the Fremont River and stopping of natural flow at springs and seeps.

Even with federally required measures, individual plants of threatened or endangered species could be inadvertantly destroyed. It is not likely that the continued existence of any candidate, proposed, or officially listed threatened or endangered plant species would be jeopardized by the construction and operation of IPP at the Salt Wash Site.

Animal Life

Overall, the project would disturb about 11,890 acres of wildlife habitat of which 5,650 acres would remain occupied at least during the life of the project. This would affect only a minute portion of the total animal habitat and populations.

The additional people that the proposed project would bring to Wayne County, Utah would increase the hunting pressure on and poaching and harassment of the region's game and non-game species including the endangered Utah prairie dog, bald eagle, peregrine falcon, and black-footed ferret, and could reduce animal life populations. The presence of 60 miles of new permanent access roads would further intensify this pressure. The degree of decline cannot be accurately predicted. Incidental losses are not expected to adversely modify the critical habitat of threatened or endangered species. The impact on the populations of prairie dogs and eagles would not be severe enough to jeopardize their continued existence. However, only five active peregrine eyries are known to exist in Utah, thus unnecessary loss of even one peregrine could constitute jeopardy to the Utah population (John Gill, FWS).

Up to 240 acres of riparian habitat important to deer, quail, ring-neck pheasant and non-game animals would be adversely altered by surface water diversion and ground water pumping. Up to 434 acres of agricultural land important to ring neck pheasant could be occupied by residential developments. Twenty-five pheasants and their annual production could be lost. This is 100 percent of the population in the affected area. Ground water pumping would stop natural flow of springs and seeps which are water sources between 25,000 and 147,200 acres of wildlife habitat in a desert region.

Transmission system towers along 47 miles in sage grouse concentration areas would provide perches for raptors and make the sage grouse more susceptible to predation. The magnitude of losses cannot be accurately assessed.

An additional 31,000 game fish per year would be needed within the region to supply the equivalent of the 1973 quality of fishing to the IPP-related population. The Utah Division of Wildlife Resource fish hatcheries are presently operating at their capacity of 11 to 12 million trout per year, and rainbow, cutthroat, brook and lake trout populations could decline without supplemental planting. In addition, the average age and size of fish in the waters of the region would decline.

Some incidental losses of the endangered Colorado squawfish and humpback chub, the proposed endangered bonytail chub, and the proposed threatened humpback sucker in the Green River could occur as a result of increased fishing pressure. These incidental losses would not jeopardize the continued existence of these species or adversely modify their critical habitat.

Recreation and Aesthetics

Off-road vehicle use and other forms of outdoor recreational use would increase within the region. Additional recreational pressures would most often occur at sites presently being used at greater than 20 percent of their design capacity, increasing use to 40 percent or more at many of the sites, which would result in overcrowding and deterioration of the environment and facilities. Overcrowding and deterioration would be intensified at sites presently being used at greater than 40 percent capacity.

The appeal of recreation attraction areas within the regional setting would be reduced for some visitors. The increase in permanent population would result in additional competition for available fish and game, which would lead to reduced hunter and fisherman success and could result in some dissatisfaction with the recreation experience.

The power plant and its visible emissions would be obvious to travelers on some segments of Highway U-24 and to viewers in areas of Class A scenery on the Fishlake National Forest, Capitol Reef National Park, and the BLM proposed Hondu Primitive Area. The power plant would be considered a landmark of interest to some and an aesthetically degrading intrusion to others. Atmospheric discoloration and reduction of visual range would degrade scenic value of high quality scenic areas in the region.

The transmission system would make 36 major highway crossings, and would parallel major highways I-15 and U.S. 93 for 160 miles in Utah and Nevada where it would be visible (medium to high contrast) to travelers in 15,145 vehicles daily. One proposed line would parallel U.S. 93 for 45 miles and would create a "tunnel effect" in combination with an existing line on the opposite side of the highway. The lines would be visible (medium to high contrast) from several communities in Utah, Henderson, Nevada, and Apple Valley, California. The line would be visible low to high contrast) from portions of 25 recreation attractions or areas of high scenic quality including three recreation attractions developed with Land and Water Conservation Fund monies; and from portions of 38 areas with potential for wilderness designation (low to high contrast).

The coal haul railroad would be a visual intrusion on the proposed Hondu Primitive Area and the Interstate Highway 70 (I-70) corridor. Along I-70 the resulting high contrast would be visible to passengers in 1,300 vehicles daily.

The presence of the proposed Moroni microwave station would reduce high aesthetic values in the area surrounding the station.

Recreation and Aesthetics

Off-road vehicle use and other forms of outdoor recreational use would increase within the region. Additional recreational pressures would most often occur at sites presently being used at greater than 20 percent of their design capacity, increasing use to 40 percent or more at many of the sites, which would result in overcrowding and deterioration of the environment and facilities. Overcrowding and deterioration would be intensified at sites presently being used at greater than 40 percent capacity.

The appeal of recreation areas within the Sevier Desert would be reduced for some visitors. The increase in permanent population would result in additional competition for available fish and game and would likely lead to less hunter and fisherman success and a resulting dissatisfaction with the recreation experience.

The powerplant stacks, buildings, and emissions would be visible (high contrast) from U.S. Highway 50. The plant would be seen (low to high contrast) from other surrounding highways, communities, and recreation attraction areas as far as 40 miles distant. It would be considered a landmark of interest to some and an aesthetically degrading intrusion to others. The transmission lines would cause visually adverse manmade contrast in or near sensitive areas such as major travel routes, primary highway crossings, high-quality scenic areas, communities, or in areas with recreational values.

Where proposed transmission lines would parallel existing lines, additional contrast would generally not add appreciably to present contrast, but would make disturbance more obvious. The power transmission systems would make 42 highway crossings in areas of low-quality scenery that would be viewed by 121,545 passengers in vehicles daily. In all areas aesthetics values would be somewhat reduced (medium contrast) although the areas have already been disturbed. The lines would be visible (medium to high contrast) from several communities in Utah, Henderson, Nevada, and Apple Valley, California. The transmission lines would be visible (low to high contrast) from 26 adjacent recreation attractions or areas of high quality (Class A) scenery, including one recreation attraction developed with Land and Water Conservation Fund monies, and from portions of 36 areas with potential for wilderness designation (low to high contrast).

Land Use

Up to 434 acres (37 percent) of the irrigated land east of Capitol Reef National Park in Wayne County could be subdivided into small non-agricultural developments. An additional 133 acres (less than 0.05 percent) of agricultural land in Emery County would be occupied by the proposed railroad.

In the regional setting, 33 areas with potential for wilderness or other special designation may receive additional ORV and other visitor use, resulting in degradation of wilderness value or other values for which they are being protected. Loss of water flow could reduce or eliminate the potential of the Dirty Devil River for Wild and Scenic River designation.

Should the proposed Moroni microwave station be built, primitive values within a portion of the proposed Hondu Primitive Area would be lost.

No adverse impacts on mining or other mineral resource extraction operations have been identified.

The proposed Salt Wash Transmission System would pass through the following six areas with potential for wilderness designation: five BLM Wilderness Study Areas (WSAs), and one uninventoried BLM Roadless Unit. Construction of transmission lines would impair wilderness character and designation suitability in the WSAs. Designation suitability of the roadless units could be impaired adjacent to the line. Any impairment of wilderness suitability on areas having wilderness character would not be allowed prior to completion of the wilderness review and congressional decision. Alternate routing would avoid impacts to wilderness character in WSAs.

Land Use Plans and Controls

The proposed railroad would cross I-70, conflicting with visual resource management objectives recommended in the BLM San Rafael Resource Area MFP. Proposed powerline activities would be in conflict with current BLM management objectives in nine areas.

The BLM planning system allows for consideration of new proposals. Alernatives are presented in this environmental statement which would avoid conflicts for some planning units; however, other plans would require revision in order for the conflicts to be resolved. Any revisions would be made following agency regulations, procedures, and policies. For BLM (inasmuch as new planning regulations have not been finalized) a policy would be followed wich would utilize the environmental statment process as a mechanism for considerng planning recommendations and trade-offs. An approval of the proposal and/or alternatives analyzed in the environmental statement shall also be a decision to amend the plans.

Land Use

An annual maximum of 44,700 acre-feet of irrigation water would be transferred from agricultural use to industrial use and would remove up to 7,760 acres of agricultural land from production. As compared to 1977 Utah harvest figures, crop losses would be equivalent to 1 percent of the alfalfa, 51 percent of the alfalfa seed, 3 percent of the grain, and 2 percent of the corn and potato production in Utah.

In the regional setting, 18 areas with potential for wilderness or other special designation may receive additional ORV and other visitor use, resulting in degradation of values for which they are being protected. No adverse impacts on mining or other mineral resource extraction operations have been identified.

The Lynndyl Transmission System would pass within the following four areas with potential for wilderness designation: three BLM Wilderness Study Areas (WSAs) and one uninventoried BLM Roadless Unit. Construction of transmission lines within these areas would impair designation suitability of the WSAs and the Roadless Unit adjacent to the line. Any impairment of wilderness suitability would not be allowed prior to completion of the wilderness review and congressional decision on areas having wilderness character. Alternative routes would avoid WSA and Roadless Unit impacts.

Land Use Plans and Controls

The power generating station and support facilities are not compatible with Millard County's Zoning Ordinance Number 78. The area's current designation is Open Range and Forest (RF-1), and a zoning variance would be required for plant construction. The transmission routes conflict with BLM management objectives in five areas.

Both Forest Service and BLM planning systems allow for consideration of new proposals. Alternatives are presented in this environmental statement which would avoid conflicts for some planning units; however, other plans would require revision in order for the conflicts to be resolved. Any revisions would be made following agency regulations, procedures, and policies. For BLM (inasmuch as new planning regulations have not been finalized) a policy would be followed which would utilize the environmental statement process as a mechanism for considering planning recommendations and trade-offs. An approval of the proposal and/or alternatives analyzed in the environmental statement shall also be a decision to amend the plans.

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